

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

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2022

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

Commission File No. 0-30351

SPI Energy Co., Ltd.

(Exact name of registrant as specified in its charter)

Cayman Islands

(State of other jurisdiction of incorporation)

20-4956638

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

4803 Urbani Ave McClellan Park, CA

(Address of Principal Executive Office)

95652

(Zip Code)

Registrant's telephone number, including area code: **(888) 575-1940**

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Ordinary Shares, par value \$0.0001 per share	SPI	NASDAQ Global Select Market

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 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 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, 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. (Check one)

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act 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 in 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 checkmark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act) Yes No

As of June 30, 2022, the close of the second fiscal quarter, the aggregate market value of the voting and non-voting common equity held by non-affiliates, computed by reference to the price at which the common equity was last sold, was \$32,968,710.

At April 14, 2023, the registrant had 30,292,960 outstanding shares of common stock, par value \$0.0001 per share.

DOCUMENTS INCORPORATED BY REFERENCE

None

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 10-K for the fiscal year ended December 31, 2022, and information we provide in our press releases, telephonic reports and other investor communications, including those on our website, contains forward-looking statements within the meaning of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Securities Act of 1933, as amended (the "Securities Act"), which are subject to risks, uncertainties, and assumptions that are difficult to predict. All statements in this annual report on Form 10-K, other than statements of historical fact, are forward-looking statements. These forward-looking statements are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

The forward-looking statements include statements, among other things, with respect to anticipated future events, including anticipated trends and developments in and management plans for our business and the markets in which we operate and plan to operate; future financial results, operating results, revenues, gross profit, operating expenses, projected costs, and capital expenditures; sales and marketing initiatives; competitive position; and liquidity, capital resources, and availability of future equity capital on commercially reasonable terms.

Forward-looking statements can be identified by the use of words such as "expect," "plan," "will," "may," "anticipate," "believe," "estimate," "should," "intend," "forecast," "project" the negative or plural of these words, and other comparable terminology. Our forward-looking statements are only predictions based on our current expectations and our projections about future events. All forward-looking statements included in this annual report on Form 10-K are based upon information available to us as of the filing date of this annual report on Form 10-K. You should not place undue reliance on these forward-looking statements. We undertake no obligation to update any of these forward-looking statements for any reason.

We have identified factors that could cause actual plans or results to differ materially from those included in any forward looking statements. These factors include, but are not limited to, the following:

- changes in tax law, tax treaties or tax regulations or the interpretation or enforcement thereof, including
- taxing authorities not agreeing with our assessment of the effects of such laws, treaties and regulations;
- an inability to execute any of our business strategies; and
- such other risk factors as may be discussed in our reports filed with the SEC.

These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to differ materially from those expressed or implied by these statements. These factors include the matters discussed in the section entitled "[Item 1A. Risk Factors](#)" and elsewhere in this annual report on Form 10-K. You should carefully consider the risks and uncertainties described under this section.

CONVENTIONS THAT APPLY TO THIS ANNUAL REPORT

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 10-K to:

- "we," "us," "our Company," "our", "SPI" or "SPI Energy" refer to SPI Energy Co., Ltd., a Cayman Islands holding company and its subsidiaries or any of them, or where the context so requires, in respect of the period before our Company became the holding company of its present subsidiaries, such subsidiaries as if they were subsidiaries of our Company at the relevant time;
- "2020," "2021," and "2022" refers to our fiscal years ended December 31, 2020, 2021 and 2022, respectively;
- "ADSs" refers to the American depositary shares, each representing ten ordinary shares, which were listed on the NASDAQ Global Select Market under the symbol of "SPI" between January 19, 2016 and September 18, 2017;
- "AUD" or "Australian Dollar" refers to the legal currency of Australia;
- "BT model" refers to our build-and-transfer model;
- "China" and "PRC" refer to the People's Republic of China, excluding, for purposes of this annual report, Hong Kong and Macau special administrative regions and Taiwan;
- "EPC" refers to engineering, procurement and construction services;
- "EUR" or "Euro" refers to the legal currency of the countries comprising the euro area;
- "EV" refers to electric vehicle;
- "British Pound" or "GBP" refers to the legal currency of the United Kingdom;
- "Japanese Yen" or "JPY" refers to the legal currency of Japan;
- "FIT" refers to feed-in tariff(s);
- "IPP model" refers to our independent power producer model;
- "LDK" refers to LDK Solar Co., Ltd.;
- "SolarJuice" refers to SolarJuice Co., Ltd., a Cayman Islands company limited, 100% owned by the Company;
- "SolarJuice AU" or "SJ AU" refers to Solar Juice Pty Ltd, an Australian company, 80% owned by SolarJuice Co.,Ltd.;
- "SJ America", or "SJ US" refers to SolarJuice American, Inc., a Delaware corporation, d/b/a Roofs 4 America which are wholly owned by SolarJuice Co.,Ltd.;
- "SJ Technology", or "SJT" means Solar4America Technology, Inc., d/b/a "Solar4america", formerly known as SolarJuice Technology Inc., a Delaware corporation, which are wholly owned by SolarJuice Co.,Ltd.;
- "Phoenix Motorcars", "Phoenix" or "PMI" refers to Phoenix Motor Inc., d/b/a "Phoenix Motorcars", a Delaware corporation, 82.5% indirectly owned by the Company;
- "EdisonFuture" refers to EdisonFuture Motor, Inc. a Delaware corporation and a wholly owned subsidiary of the Company;
- "SPI Solar" refers to "SPI Solar,Inc.", a Delaware corporation and a wholly owned subsidiary of the Company;
- "Orange Power" refers to "Orange Power Co.,Ltd.", a Cayman Islands company limited, 100% owned by the Company;
- "SEM Wafertech" refers to SEM Wafertech Inc., d/b/a "SEM Wafertech", a Delaware corporation and a wholly owned subsidiary of the Company;
- "Zoomers" refers to Ridezoomers Inc., d/b/a "Zoomers", a Delaware corporation and a wholly owned subsidiary of the Company;
- "O&M" refers to operating and maintenance;
- "PPA" refers to power purchase agreement(s);
- "PV" refers to photovoltaic;
- "Redomicile Merger" refers to the redomicile of Solar Power, Inc. to the Cayman Islands through a merger with and into a wholly-owned subsidiary of SPI Energy Co., Ltd., which was completed on January 4, 2016;
- "Shares" or "ordinary shares" refers to our ordinary shares, par value \$0.0001 per share;
- "SPI Power" refers to Solar Power, Inc., a company incorporated under the law of California;
- "U.K." refers to the United Kingdom;
- "U.S." refers to the United States of America;
- "U.S. dollar" or "\$" refers to the legal currency of the United States of America; and
- "watt" or "W" refers to the measurement of total electrical power, where "kilowatt" or "KW" means one thousand watts, "megawatts" or "MW" means one million watts and "gigawatt" or "GW" means one billion watts.

Discrepancies in any table between the amounts identified as total amounts and the sum of the amounts listed therein are due to rounding.

The conversion of amounts of Australian Dollars, Euros and Renminbi, respectively, into U.S. dollars in this annual report, made solely for the convenience of readers, is based on the noon buying rates in the city of New York for cable transfers of Australian Dollars, Euros, British Pounds, Japanese Yen and Renminbi, respectively, as set forth in the H.10 statistical release of the U.S. Federal Reserve Board as of December 31, 2022, which was AUD 1.4695 to \$1.00, EUR 1.0698 to \$1.00, GBP 1.2077 to \$1.00, JPY 131.8100 to \$1.00 and RMB 6.8972 to \$1.00, respectively, unless indicated otherwise. No representation is intended to imply that the Australian Dollar, Euro or Renminbi could have been, or could be, converted, realized or settled into U.S. dollars at the foregoing rates or any other rate.

SUMMARY OF RISK FACTORS

Our business is subject to risks of which you should be aware before making an investment decision. The risks described below are a summary of the principal risks associated with an investment in us and are not the only risks we face. You should carefully consider these risk factors, the risk factors described in [Item 1A](#), and the other reports and documents that we have filed with the Securities and Exchange Commission ("SEC").

Risks Related to Our Company

- We have incurred net losses, experienced net cash outflows from operating activities and recorded working capital deficits. If we do not effectively manage our cash and other liquid financial assets and execute our liquidity plan, we may not be able to satisfy repayment requirements on our borrowings.
- We are in default on a number of our obligations, which could result in our being forced to cease operations if we are unable to reach satisfactory settlement with applicable counterparties.
- Our substantial indebtedness could adversely affect our business, financial condition and results of operations.
- Our management has identified material weaknesses in our internal control over financial reporting and we may not be able to remediate these weaknesses. Additionally, our management may identify material weaknesses in the future that could adversely affect investor confidence, impair the value of our securities and increase our cost of raising capital.
- We rely substantially on our senior management team and our ability to attract, train and retain qualified personnel for our current and future success.
- We conduct our business in diverse locations around the world and are subject to economic, regulatory, social and political risks internationally and in the regions where we operate.

Risks Related to Our Solar Projects Business

- The reduction, modification, delay or discontinuation of government subsidies and other economic incentives for the solar industry may reduce the profitability or viability of our solar projects and materially adversely affect our business.
- The significant period of time between our upfront investments in solar projects and their commencement of revenue generation could materially and adversely affect our liquidity, business and results of operations.
- The market for solar project development is highly competitive.
- We may not be able to obtain long-term contracts for the sale of electricity generated by our solar projects under our IPP model at prices and on other terms favorable to attract financing and other investments.
- Our solar projects have short operating histories and may not perform up to our expectations.

Risks Related to Our America Solar Module Manufacturing Business

- We face risks associated with the international manufacturing, marketing, distribution and sale of our products and the construction and operation of our US manufacturing facilities, and if we are unable to effectively manage these risks, our business and operations abroad may be adversely affected and our ability to maintain, develop and expand our business in the US may be restricted.
- Compliance with environmentally safe production and construction and renewable energy development regulations can be costly, while non-compliance with such regulations might result in adverse publicity and potentially significant monetary damages, fines and suspension of our business operations.

Risks Related to Our PV Components Business

- We may have to secure payments for certain consumer solar or battery sales but there is no assurance that such payments will be timely collected. We have also enhanced our collection efforts and undertaken various measures to collect outstanding payments from customers and may suffer damages as a result of legal actions and other payments due to us.
- Our sales may be subject to risks associated with construction, delays and other contingencies, which could have a material adverse effect on our reputation, business and the results of operations.
- Warranties provided by our third party installers and contractors may be limited or insufficient to compensate for our losses, or may not cover the nature of our losses incurred.
- We may be subject to product or strict liability claims if the provision of our services or the solar projects we sell result in injury or damage, and we have limited insurance coverage to protect against such claims, as well as losses that may result from business interruptions or natural disasters.

Risks Related to Our Residential Roofing and Solar Installation Business

- The solar energy industry is a new and evolving market, which may not grow to the size or at the rate we expect.
- We might lose business to competitors that underbid us and might be unable to compete favorably in our highly competitive industry.
- Our business is seasonal and subject to adverse weather conditions, which can adversely impact our business.
- The reduction, modification, delay or discontinuation of government subsidies and other economic incentives for the solar industry might reduce the profitability or viability of our solar projects and materially adversely affect our business.
- Existing rules, regulations and policies pertaining to electricity pricing and technical interconnection of customer-owned electricity generation and changes to these regulations and policies might deter the purchase and use of solar energy systems and negatively impact development of the solar energy industry.

Risks Related to Our Operation in Phoenix

- Phoenix's results of operations have not resulted in profitability, and we may not be able to achieve profitability going forward.
- We have yet to achieve positive cash flow and, given our projected funding needs, our ability to generate positive cash flow is uncertain.
- Electric vehicles are a new industry, so Phoenix's success cannot be assured.
- Our plan to shift focus and primarily design, develop, manufacture and sell the EF-1 pickup truck and EF-1 V van, makes it difficult to evaluate our future business prospects.
- The automotive market is highly competitive, and we may not be successful in competing in this industry.
- We have never manufactured vehicles on a higher volume commercial scale and our ability to design, develop and manufacture vehicles of sufficient quality and appeal to customers on schedule and on a large scale is unproven.

Risks Related to Our Ordinary Shares

- Our ordinary shares may be delisted under the Holding Foreign Companies Accountable Act if the PCAOB is unable to inspect our auditors. The delisting of our ordinary shares, or the threat of their being delisted, may materially and adversely affect the value of your investment. Furthermore, on June 22, 2021, the U.S. Senate passed the Accelerating Holding Foreign Companies Accountable Act, which, if enacted, would amend the HFCA Act and require the SEC to prohibit an issuer's securities from trading on any U.S. stock exchanges if its auditor is not subject to PCAOB inspections for two consecutive years instead of three.

- *It may be difficult to effect service of process on, or to enforce any judgments obtained against us, our directors, or our senior management members.*
- *The price of our securities has been and may continue to be highly volatile.*
- *If we fail to meet the applicable listing requirements, NASDAQ may delist our ordinary shares from trading on its exchange in which case the liquidity and market price of our securities could decline and our ability to raise additional capital would be adversely affected.*
- *We are treated as a U.S. corporation for U.S. federal tax purposes.*

Risks Related to Our International Operations

- *We are subject to risks associated with foreign currency exchange rates, fluctuations of which may negatively affect our revenue, cost of goods sold and gross margins and could result in exchange losses.*
- *The ongoing debt crisis in the Eurozone and market perceptions concerning the instability of the Euro and the European economy could adversely affect our business, results of operations and financing.*

General Risk Factors

- *The preparation of our consolidated financial statements in accordance with U.S. generally accepted accounting principles requires us to make estimates, judgments and assumptions that may ultimately prove to be incorrect.*
- *Our business and financial results may be materially adversely affected by the current COVID-19 pandemic outbreak.*
- *Our business could be negatively impacted by cyber security threats, attacks and other disruptions.*

PART I

ITEM 1 Business

Business Overview

We are a global renewable energy company and provider of solar storage and EV solutions that was founded in 2006 in Roseville, California and is now headquartered in McClellan Park, California.

Our company is involved in six key businesses, including :

- 1) Global solar project development business, d/b/a SPI Solar;
- 2) Electricity sale business under IPP model, d/b/a Orange Power;
- 3) American solar module manufacturing business, d/b/a Solar4America;
- 4) Solarjuice Australia Distribution Business, d/b/a Solarjuice AU;
- 5) Solarjuice American Roofing and Installation business, d/b/a Roofs 4 America;
- 6) Phoenix Motorcars EV business,d/b/a Phoenix Motorcars;

SPI Solar acquires, develops and sells solar projects in multiple countries, including the U.S., the U.K., Greece, Japan and Italy. SPI Solar acquires and develops solar PV projects that are either sold to third party operators or owned and operated by Orange Power for selling of electricity to the grid. As of the date of this report, SPI Solar is constructing an aggregate of 12.04 MW of projects in the U.S. under our BT model and 251.99 MW PV project and 5.45 megawatt hour (MWh) energy storage project in Greece and U.S.in announced pipeline.

Orange Power owns and operates solar projects that sell electricity to the grid globally. As of April 14, 2023, Orange Power currently owns and operates 17.51 MW solar projects in U.S., U.K., Japan and Europe.

Solar4America produces "Made-in-America" solar modules. SJ Technology, doing business as "Solar4America" opened its first US solar module assembly factory in January 2022 in McClellan Park, California, which commenced pilot production in the second quarter of 2022 and began delivering Solar4America brand modules to customers weekly during the third quarter of 2022.

SolarJuice AU distributes the most popular brands of solar photovoltaic ("PV") modules, solar energy inverters, batteries and storage devices, other solar BOS components, and accessories to commercial customers located in every state and territory of Australia. SolarJuice AU also designs and sells its own private brand of PV products under the trade name "Opal," including Opal solar modules and "Opal Storage" batteries. Established in September 2009 by founders Rami Fedda and Andrew Burgess, who combined their industry knowledge, supplier networks and sales management skills, SolarJuice AU has grown into one of Australia's leading distributors of PV and solar-related products.

Our U.S. residential roofing and solar installation business, operated by SolarJuice American Inc., or, SJ America, d/b/a Roofs 4 America, performs residential installations and commercial projects for some of the nation's largest home builders and real estate developers. Roofs 4 America holds contractor licenses, as required, in California. For solar and re-roofing projects, we manage the entire process from surveying, design, permitting, installation, final inspection, and connection to the power grid; we may choose to outsource part of this process to third party service providers. With hundreds of installation employees, SJ America is one of only a few residential solar companies with extensive roofing experience.

Phoenix Motorcars is a leader in medium-duty commercial electric vehicles, and is developing EV charger solutions, electric pickup trucks, electric forklifts, and other EV products. Phoenix Motorcars operates two primary brands, "Phoenix Motorcars" focused on commercial products including medium duty electric vehicles, chargers and electric forklifts, and "EdisonFuture" which intends to offer light-duty electric vehicles.

Alongside our primary business ventures, we have diversified our portfolio with additional investments in various sectors, including Solar wafer manufacturing business, d/b/a SEM wafertech, the electric scooter retail business, d/b/a Zoomers, and other renewable energy investments. SEM wafertech focus on solar wafer manufacturing business. Solar wafers are a key component used for manufacturing solar cells, which are used in the manufacturing of solar panels. Zoomer offers electric scooter through the retail store and service center in Fremont, California.

SPI maintains global operations in North America, Australia, Asia and Europe and is also targeting strategic investment opportunities in fast growing green industries such as battery storage, charging stations, and other investment which leverage the Company's expertise and substantial solar cash flow.

Corporate History and Organizational Structure

History and Development of the Company

Our legal and commercial name is SPI Energy Co., Ltd. Our principal executive office is located at 4803 Urbani Ave McClellan Park, CA , 95652. Our telephone number at this address is 888-575-1940. Our registered office is situated at 4th Floor, Harbour Place, 103 South Church Street, PO Box 10240, George Town, Grand Cayman, KY1-1002, Cayman Islands.

The Company was incorporated by SPI Power as a company limited by shares in the Cayman Islands on May 4, 2015. On January 4, 2016, we completed the redomiciliation of SPI Power to the Cayman Islands, whereby SPI Power merged with and into a wholly-owned subsidiary of the Company and the holders of SPI Power common stock received ADSs representing ordinary shares of the Company. As a result, the former shareholders of SPI Power became the beneficial owners of the capital stock of the Company, and the Company, together with our subsidiaries, now own and continue to conduct SPI Power's business in substantially the same manner as was conducted by SPI Power and its subsidiaries. The Company is also managed by substantially the same board of directors and executive officers that managed SPI Power previously.

Between January 19, 2016 and September 18, 2017, our ADSs were listed on the NASDAQ Global Select Market under the symbol of "SPI". The Bank of New York Mellon, the depository bank for the ADS facility, terminated our ADS facility on September 18, 2017. Following such termination, we listed our ordinary shares, par value US\$0.0001 per share, for trading on the NASDAQ Global Select Market in substitution for our ADSs. On September 19, 2017, our ordinary shares began trading on the NASDAQ Global Select Market under the symbol of "SPI".

In September 2017, we entered into a framework share purchase agreement to acquire 100% equity interests of three Greek companies, namely THERMI SUN S.A, HELIOHRISI S.A., and HELIOTIXIO S.A., from THERMI TANEO Venture Capital Fund ("TTVCF"), for a total consideration of EUR 16.8 million, subject to certain adjustments. These three companies own a total of four PV plants with 7.4MWp PV installations in northern Greece. The closing of the transaction took place in three separate stages (one for each company under acquisition). The acquisition of HELIOTIXIO S.A. was closed in December 2017. The Company completed the second-stage acquisition of 100% of the equity interest of HELIOHRISI S.A., which owns 1.988 MW of photovoltaic projects in Greece on March 20, 2019. The last of three acquisitions of 100% of the equity interest of THERMI SUN S.A., which owns 4.4 Megawatts ("MW") of photovoltaic ("PV") projects in Greece, was closed November 1, 2019. With 7.4MWp PV installations added to SPI Energy's existing PV portfolio in Greece, the Company becomes one of the significant PV owners in Greece.

By the year end of December 31, 2018, our wholly owned subsidiary, SPI Solar Inc., sold eight solar projects in the U.S. (9.653 MW) to third parties.

On January 17, 2019, we entered into share purchase agreements with certain existing shareholders (including certain key management personnel of the Company) and other investors (collectively, the "Purchasers"), pursuant to which the Purchasers agreed to purchase an aggregate of 6,600,000 ordinary shares of the Company at a price of US\$1.16 per Share, for a total consideration of approximately \$7.7 million. The transaction was closed on April 12, 2019. Those shares were being offered and sold to private investors, on a private placement basis in reliance on Regulation S. Those shares have not been and will not be registered under the Securities Act of 1933, as amended, and may not be offered or sold in the United States absent registration or an applicable exemption from registration. Net proceeds from the sale of those shares are intended to be used for expansion of our global PV project activities and general corporate purposes.

On July 23, 2019, the Company entered into a framework agreement to acquire up to eight solar PV projects, totaling 21MW in the State of Oregon (the "Oregon Portfolio"). On August 26, 2019, the Company completed the closing of Manchester and Waterford solar projects with a total of approximately 5.4MW. On September 10, 2019, the Company completed the closing on the Belvedere project with approximately 3.56MW of clean energy for the local community. On September 24, 2019, the Company completed the closing of the Dover and Clayfield solar projects with a total of approximately 5.45MW. On April 22, 2020, the Company completed the acquisition of the Cork project with a total of approximately 1.5MW. The Company has now closed 6 of the 8 projects within the Oregon Portfolio. The Company does not intend to purchase the remaining 2 projects, Carlow Solar LLC and Cavan Solar LLC and the right entitled SPI to purchase these remaining 2 projects has expired already.

On September 26, 2019, the Company completed the closing of the sale of Sun Roof II and Sun Roof V to Theia Investments (Italy) S.r.l. ("Theia"), a company established by an infrastructure fund managed by Stafford Capital Partners ("Stafford"), a leading private markets investment and advisory group. Sun Roof II, comprised of three rooftop solar projects totaling 1.83 MW located in Sassari, Italy, and Sun Roof V, a 1 MW rooftop solar project located in Cisterna di Latina, Italy, have been in operation since 2012. Theia paid approximately EUR4.3 million to complete the transaction. On March 9, 2020, the Company completed the closing of the sale of its Sun Roof I assets, a 479 kWp rooftop solar project located in Aprilia, Italy, that has been in operation since 2012. Proceeds from the sale were approximately EUR 1.1 million before transaction fees, providing additional capital for the development of solar assets in the US and Greece. After the sale of Sun Roof II, Sun Roof V and Sun Roof I, the Company currently owns only 1 PV asset with a capacity of 0.993 MW in Italy.

On November 12, 2020, the company, through EdisonFuture, Inc., a wholly owned subsidiary of the Company, acquired 100% of the membership interest of Phoenix Cars, LLC ("PCL") and Phoenix Motorcars Leasing, LLC ("PML"). Simultaneously, EdisonFuture, Inc. effected the transfer of 100% membership interests of PCL and PML to Phoenix Motor Inc.

In February 2021, SJ America entered the solar and roofing products installation business, upon acquiring certain assets from Petersen-Dean Inc. ("PDI"), which was founded in 1984, and specialized in residential roofing and solar installations in California, Colorado, Florida, Nevada, and Texas. PDI partnered with some of the nation's largest builders and developers for their roofing and solar product installations.

On April 12, 2021, SPI Solar executed a definitive agreement to acquire the MA Lovers Lane 6.5 megawatt (MW) solar photovoltaic (PV) and 5.45 megawatt hour (MWh) energy storage project in Massachusetts from a third-party developer. The project will sell power through Massachusetts' SMART program and will provide community solar subscriptions to national grid customers. The project is expected to come online in 2024.

In December 2021, SPI Solar acquired the existing lease for the original 140,000 square feet PV solar plant in Sacramento, California and certain pieces of solar module assembly equipment from Sunergy California LLC ("Sunergy"). Sunergy filed Chapter 11 bankruptcy in January 2021. Now with this facility and solar module assembly equipments, we can further support our growth and enables our Solar4Ameirca business to deliver Made-in-USA solar modules. Solar4America started serving the U.S. market in Q1 2022, while agreements have been signed to upgrade the facility with new technology and equipment, ramping to full solar module production capacity of 2.4 gigawatt (GW) per year by the end of 2023.

On January 24, 2022, the Company announced the opening of its first RideZoomers electric scooter retail store and service center in Fremont, California. RideZoomers Inc. is a wholly owned subsidiary of the Company. In addition to offering RideZoomer electric scooters, the Fremont store will include a Solar4America showroom displaying the latest available branded on- and off-grid solar, battery, EV charger, and home energy solutions. Established in Seattle in 2019 as a scooter-sharing startup, RideZoomers pivoted to a direct-to-consumer and hardware business model in 2020 in the wake of the COVID-19 outbreak. SPI Energy acquired the assets of RideZoomers in July 2021. The Fremont City store is located at 6066 Stevenson Boulevard., Fremont, California, 94538.

On March 21, 2022, SJ Technology, doing business as Solar4America launched 450 watt (W) and 550W solar modules for commercial projects. The new commercial solar modules are manufactured at the Company's state-of-the-art facility in Sacramento, which combines California's highly skilled workers with machine-to-machine connectivity, featuring a high degree of precision automation and continuous improvement for manufacturing PV modules.

On May 9, 2022, SolarJuice AU signed a 2GW (gigawatt) supply agreement with Sungrow, the global leading inverter solutions supplier for renewables. The 2GW capacity of the supply contract, which includes PV inverters, storage systems, batteries, and other accessories, makes this the largest and most comprehensive contract of its kind in the Australian solar market. The parties announced the agreement at the Smart Energy Conference & Exhibition (Smart Energy 2022), Australia's premier event for solar, storage, and energy management, on May 6, 2022.

On June 7, 2022, Phoenix Motor Inc. priced its initial public offering (the "IPO") of 2,100,000 shares of its common stock, par value \$0.0004 per share, at \$7.50 per share. The shares are listed on the Nasdaq Capital Market and trade under the ticker symbol "PEV" beginning on June 8, 2022. As of the date of this report, We indirectly owned approximately 82.6% of the outstanding voting power of the outstanding common stock of Phoenix Motorcars through EdisonFuture, Inc.

On Sept 15, 2022, the Company launched its new solar wafer manufacturing business, with formal registration as SEM Wafertech Inc which we plan to start productions in middle of 2023. Solar wafers are a key component used for manufacturing solar cells, which are used in the manufacturing of solar panels. The Company is targeting delivery and production of solar wafers in the U.S. by 2023 with an initial capacity of 1.5GW. The Company also plans to further increase its solar wafer manufacturing capacity to 3.0GW by 2024. The Inflation Reduction Act of 2022 created attractive incentives for companies to produce solar wafers and solar modules in the United States. Under the Act, solar wafer manufacturers will receive \$12 per square meter of solar wafers produced.

On January 9, 2023, SJ Technology has started volume production of M10 solar modules from its state-of-the-art production line at its facility in Sacramento, CA and have started delivering to customers. This is the very first domestic M10 production line in the U.S. equipped with the latest state-of-the-art technologies. The new line will add an additional 550MW of solar module manufacturing capacity to our existing production volume. We will be delivering 410W American-made modules for the residential market and 550W all black, American-made modules for commercial and industrial markets. The Solar4America module manufacturing facility now produces 700MW with capacity ramping up to 2.4GW in 2023. Currently Solar4America, our Sacramento, California-based solar module manufacturing subsidiary, has production capacities for 2023 on an array of modules including 330W/60 cells and 410W/72cells, 410W/108 half cut cells all black modules for the residential market and 410W/72 cells (silver) and 550W solar modules for industrial and commercial markets.

Deconsolidation of Sinsin

On January 1, 2017, we deconsolidated Sinsin due to loss of control.

Disposition of China Assets

On August 30, 2018, the Company entered into a share purchase agreement (the "SPA") with Lighting Charm Limited (the "Buyer"), an affiliate of Ms. Shan Zhou, the spouse of Xiaofeng Peng, the Company's Chairman of the Board of Directors and Chief Executive Officer. The SPA was approved by an independent committee of the Company's Board of Directors, and the transactions contemplated by the SPA closed on December 10, 2018. Pursuant to the terms of the SPA, the Company sold to the Buyer 100% of the shares of SPI China (HK) Limited ("SPI China"), which held all of the Company's assets and liabilities related to its business in China (the "Acquired China Business"). These assets include the EPC business, PV projects, Internet finance lease related business, and E-commerce in China. In connection with the transaction, a pre-closing restructuring was accomplished. On April 30, 2019, the transfer was completed, and the Buyer became the owner of the shares in SPI China.

Our Investment in Phoenix

On November 12, 2020, the Company completed the acquisition of Phoenix Cars LLC and Phoenix Motorcars Leasing LLC (together, "Phoenix"), an electric drivetrain manufacturer for medium-duty commercial vehicles and final stage manufacturer that integrates its drivetrains into these vehicles.

On June 7, 2022, Phoenix Motorcars priced its initial public offering (the "IPO") of 2,100,000 shares of its common stock, par value \$0.0004 per share, at \$7.50 per share. The shares are listed on The Nasdaq Capital Market and trade under the ticker symbol "PEV" beginning on June 8, 2022. As of the date of this report, we indirectly owned approximately 82.6% of the outstanding voting power of the outstanding common stock of Phoenix Motorcars through EdisonFuture, Inc.

Our Investment in Residential Roofing and Solar Installations Business

Following the January 6, 2021 purchase of all work-in-progress consumer contracts of Petersen-Dean Inc. ("PDI"), for \$875,000, on February 25, 2021 Solarjuice American Inc., a wholly owned subsidiary of the Company ("SJ US"), closed the acquisition of substantially all operating assets of PDI, including certain construction contracts with work-in-progress billings, fixed assets, intellectual property and other assets, for total cash consideration of \$6,850,000 plus the assumption of \$11,000,000 of the outstanding balance under an account receivables financing arrangement of a previous lender of PDI, net off by accounts receivables pledged for the liability with net balance of PDI of \$11,764,085. SJ US does not assume any other PDI obligations, except to cure existing leases or warranties.

Founded in 1984, Petersen-Dean, Inc. specializes in residential roofing and solar system installations, frequently in cooperation with some of the nation's largest builders and developers. With more than a million installations, the Pleasanton, CA-based company employs hundreds of installers and operates in five states: California, Florida, Nevada, Colorado, and Texas.

Since early 2020, PDI started to face the unprecedented disruption caused by the COVID-19 pandemic, which placed inexorable pressure on the business. As a result of the various shelter-in-place orders issued by local governments in response to the pandemic, PDI and its workforce were unable to operate at full capacity, as jobs were closed down or work has been halted at sites throughout the United States. This disruption caused a significant slowdown in collections, reductions in revenue, and cash-collection delays. As a result, PDI and 15 of its affiliates filed petitions for relief under chapter 11 of the United States Bankruptcy Code on June 11, 2020.

In July 2022, the Group made a decision that its SJ America subsidiary would pause its roofing and solar energy system installation business in the states of Florida, Texas, Nevada and Colorado, due to insufficient business volume and profitability in those four states.

Our Recent Equity Financings

In October 2020, the Company offered and sold 2,964,000 ordinary shares in a registered direct offering to institutional investors at a purchase price of \$5.40 per share for proceeds of approximately \$14.6 million, after deducting the placement agent's fees and other expenses.

In November 2020, the Company sold a Convertible Promissory Note to an investor for total consideration of approximately \$2.11 million, convertible into ordinary shares of the Company at a conversion price of \$26.00 per share. The Convertible Promissory Note was offered and sold solely to the investor in a private placement in reliance on Regulation D promulgated under the U.S. Securities Act of 1933, as amended.

In December 2020, the Company offered and sold 3,495,000 ordinary shares and warrants to purchase an aggregate of 3,495,000 ordinary shares in a registered direct offering to institutional investors at a purchase price of \$10.02 per share and accompany warrant for \$32.3 million, after deducting the placement agent's fees and other expenses. The warrants are exercisable for a period of five years from December 7, 2020 at an exercise price of \$10.50 per share.

In February 2021, June 2021, September 2021 and November 2021, the Company sold Convertible Promissory Notes to an investor for consideration of approximately \$4.21 million for each Convertible Promissory Note, and \$16.84 million in total, convertible into ordinary shares of the Company at a conversion price of \$20.00 per share. The Convertible Promissory Notes were offered and sold solely to the investor in a private placement in reliance on Regulation D promulgated under the U.S. Securities Act of 1933, as amended.

In February 2021, the Company offered and sold 1,365,375 ordinary shares in a registered direct offering to certain institutional investors at a purchase price of \$10.79 per ordinary share for \$13.6 million, net of direct offering cost of \$1.1 million.

In April 2022, the Company sold a Convertible Promissory Note to an investor for total consideration of approximately \$2.11 million, convertible into ordinary shares of the Company at a conversion price of \$20.00 per share. The Convertible Promissory Note was offered and sold solely to the investor in a private placement in reliance on Regulation D promulgated under the U.S. Securities Act of 1933, as amended.

On December 22, 2022, the Company entered into the purchase agreements ("the Agreements") with Chief Operating Officer of the Company and Palo Alto Clean tech holding limited (previously known as "LDK New Energy Holding Limited"), an entity affiliated with the Company's Chief Executive Officer (collectively, the "Purchasers") to issue and sell 1,150,000 ordinary shares of the Company (the "Shares") to the Purchasers at a price of US\$1.01 per share, representing the closing price of the Company's Ordinary Shares reported on Nasdaq on December 22, 2022, multiplying by 1.2 times, for a total consideration of approximately US\$1,161,500 (the "Private Placement"). In addition, the Purchasers are subject to a two-year lock-up period after the closing of the Private Placement. The Private Placement has been consummated on December 22, 2022, upon satisfaction of customary closing conditions.

On June 7, 2022, Phoenix Motorcars priced its initial public offering (the "IPO") of 2,100,000 shares of its common stock, par value \$0.0004 per share, at \$7.50 per share. The shares are listed on The Nasdaq Capital Market and trade under the ticker symbol "PEV" beginning on June 8, 2022. As of the date of this report, we indirectly owned approximately 82.6% of the outstanding voting power of the outstanding common stock of Phoenix Motorcars through EdisonFuture, Inc.

Capital Expenditures and Divestitures

For our global project development business, since January 1, 2018 through April 14, 2023, we had completed a series of acquisitions of solar projects that were in operation, consisting of (i) 1.988 MW and 4.4MW of projects in Greece, acquired in March 2019 and November 2019 respectively, for a total consideration of EUR 11.1 million (\$12.5 million), (ii) a total of 15.77 MW DC of projects in the state of Oregon, US, acquired in August, September 2019 and April 2020 respectively for a total consideration of \$1.3 million, and (iii) 6.5 megawatt (MW) solar photovoltaic (PV) and 5.45 megawatt hour (MWh) energy storage project in Massachusetts in April 2021, for a total consideration of US\$ 2.1 million plus interconnection cost.

Since January 1, 2018 through April 14, 2023 we completed the following divestitures: From January 2019 to December 31, 2019, we sold 1

solar project in Japan (1.99MW) to a third party at the consideration of \$9.56 million, which has been recognized as revenue accordingly. On September 26, 2019, we sold Sun Roof II comprised of three rooftop solar projects totaling 1.83 MW, and Sun Roof V with 1 MW rooftop solar project in Italy at the consideration of EUR4.3 million. On March 16, 2020, we sold Sun Roof I, a 479 kWp rooftop solar project located in Italy at the consideration of EUR1.1 million before transaction fees. After the sale of Sun Roof II, Sun Roof V and Sun Roof I, the Company currently owns only 1 PV asset with a capacity of 0.993 MW in Italy. On July 27, 2020, we closed of the sale of the 5.5MW Mountain Creek solar project to Marina Energy at the consideration of US\$16.1 million. We divested all our operations in China in December 2018 for nominal consideration due to the significant liabilities in the business.

As of the date of this report, we are constructing an aggregate of 12.04 MW of projects in the U.S. under our BT model. We anticipate that the U.S. project will be connected to the grid in 2023. We are financing this development with a combination of internal funds, project finance and tax equity.

We had 251.99MW PV project and 5.45 megawatt hour (MWh) energy storage project in Greece and U.S. in announced pipeline as of April 14, 2023. See "[Item 1 Business](#) -Our Global Project Development Business- Our Solar Project Portfolio." We expect to complete the acquisition of, or commence permitting processes for, our projects in announced pipeline as soon as practicable. We believe these new additions, combined with our existing project portfolio, demonstrate our broad geographic reach and established presence across key solar markets and mitigate country-specific risks.

Additional Information

The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers, such as we, who file electronically with the SEC. The address of that website is <http://www.sec.gov>. Our Internet address is www.spigroups.com.

Organizational Structure

The following table sets out our principal subsidiaries as of December 31, 2022:

Subsidiaries	Place of Incorporation	Percentage of ownership
Solar Juice Co., Ltd.	Cayman	100%
Solar4America Technology Inc.	US	100%
SolarJuice America Inc.	U.S.	100%
SPI Solar, Inc.	U.S.	100%
Italsolar S.r.l.	Italy	100%
Helioxitio S.A.	Greece	100%
Helioxrisi S.A.	Greece	100%
THERMI SUN S.A.	Greece	100%
Solar Juice Pty Limited	Australia	80%
SPI Solar Japan G.K.	Japan	97%
Solar Power Inc. UK Services Limited	U.K.	100%
Edisonfuture Inc.	U.S.	100%
Phoenix Motor Inc.	U.S.	82.5%

Our Business

The following table sets forth a breakdown of our net sales by geographic location of customers for the periods indicated:

	For the years ended December 31,				
	2021		2022		
	(\$ in thousands except percentage)				
United Kingdom	\$ 1,211	0.7%	\$ 2,053	1.2%	
Australia	124,248	76.7%	132,954	74.9%	
United States	33,093	20.4%	38,867	21.9%	
Greece	2,686	1.7%	2,545	1.4%	
Japan	65	0.1%	80	0.0%	
Italy	690	0.4%	1,019	0.6%	
	\$ 161,993	100.0%	\$ 177,518	100.0%	

Our Australia Distribution Business

Solar Juice Pty Limited or SJ AU is a wholesale distributor of Solar PV panels, solar inverters, components and complete solar systems, which was established in Australia in September 2009. It is one of the largest importers of solar related products in Australia with over 5200 B2B customers in every state and territory of Australia, New Zealand and Southeast Asia. As of the date of this annual report, Solar Juice Australia has six warehouses located around Australia.

Solar Juice Australia, as a wholesale supplier, has developed key partners which have supported the growth of its brands throughout Australia, New Zealand and South East Asia ("SEA") Countries. Solar Juice Australia aligns itself with the most popular brands Sungrow, Fronius, SMA, Tesla, Trina, REC, and LONGi, which have the same values as Solar Juice Australia, namely service and support, quality and value for money. Solar Juice Australia's products are backed by warranties held in Australia, experience and knowledge which set it apart from the competition, and commitment to serving the customer' needs.

COVID-19 has significant impacts in some states in Australia including NSW and QLD in early 2022. Solar Juice's revenue was affected by local lockdowns in Q1 2022 by state government restrictions. The management of Solar Juice Australia's has made detailed business continuity and resilience plan, predicted market changes and adjusted purchase and sales strategies accordingly. The whole team has put in extra time and effort to help the company went through the toughest period without impacts in revenue and profit. Solar Juice Australia has achieved AUD 191.4 million revenue, AUD

17.4 million gross profit and AUD 5.3 million net profit in 2022, which increased 16%, 14% and 20 % respectively from 2021. Solar Juice Australia's trade receivable balance increased 66%, inventory increased 13%, trade payable balance increased 1.5% from the previous year. As a result, the net assets of Solar Juice Australia increased significantly by 19.4% to AUD 23.4 million.

We expect Solar Juice Australia to benefit from these improvements in long term and keep its leadership in premium PV market in Australia. In the meantime, Solar Juice Australia's traditional strengths such as outstanding customer services, technical support, and warranty service will keep differentiating it from competitors.

Solar Juice Australia currently accounts for 74.9% of our revenues and 18.6% of our total assets.

Our Global Project Development Business

We develop and sell or own and operate solar projects which sell electricity to the grid in multiple countries, including the U.S., the U.K., Greece, Japan and Italy. We are expanding our global project development business by ramping up our portfolio of global solar projects, including projects that we plan to hold in the long term for electricity generation revenue under our IPP model, as well as projects which we plan to sell in the future when we are presented with attractive opportunities under our BT model. We grow our project portfolio primarily through acquisitions and our project acquisition strategy is based on rigorous market research and due diligence on the target project's capacity, local energy demands, applicable tariff regime, supporting infrastructure, local government support and topography for construction in the case of projects under construction and projects in pipeline. We also consider available financing options, internal rate of return, key technical components, terms of the grid connection agreements and power purchase agreements, or PPAs, as well as guarantees on performance for projects in all development stages. We act as secondary developer for the projects under construction or in pipeline when they are acquired. We either hold these projects in the long term for electricity generation revenue or sell them when presented with attractive opportunities.

We had an aggregate 251.99 MW of PV projects and 5.45 MWh energy storage project in the U.S., the U.K., Greece, Japan and Italy as of April 14, 2023.

Most of our solar projects are subject to the FIT or PPA policies of the countries or regions where they operate. FIT refers to the national and local subsidies to solar power generation supported by the government. PPA refers to power purchase agreement with electricity company. For the FIT terms of our projects, please refer to "-Our Solar Project Portfolio."

Our Solar Project Portfolio

We expect our solar projects to have operational lives of 20 to 25 years. As of April 14, 2023, our solar project portfolio consisted of:

- Projects in Operation - "Projects in operation" refers to projects connected to the grid and selling electricity. As of April 14, 2023, we have projects in operation with an attributable capacity of 17.51 MW in the U.K., Greece, Japan and Italy.
- Projects under Construction - "Projects under construction" refers to projects at the construction stage. We generally complete construction in three to six months after obtaining all the permits required for construction, if local climate and topographical conditions permit. As of April 14, 2023, we have 12.04MW of projects under construction in the US and we expect a majority (in energy capacity) to be connected to the grid by 2023.
- Projects in Announced Pipeline - "Projects in announced pipeline" refers to projects that we have entered into definitive agreements to develop with a third party in which we expect to own a majority of the equity interest, and projects we have entered into definitive agreements to acquire. We have 10.24 MW project in the state of Hawaii, U.S. and 6.8 megawatt (MW) solar photovoltaic (PV) and 5.45 megawatt hour (MWh) energy storage project in the state of Massachusetts, U.S., 117MW project in Maryland, U.S., 78.4MW in Illinois, US, 10 MW solar photovoltaic (PV) in Greece, as of April 14, 2023.

The following summary sets forth our solar projects in operation, solar projects under construction and solar projects in announced pipeline as of March 30, 2023. For more recent development of the solar projects portfolio and potential sale of our solar projects, please see "[Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#)-B. Liquidity and Capital Resources-Capital Resources and Material Known Facts on Liquidity."

Solar Projects in Operation*

Country	Project name	Gross capacity (MW)	Our equity holding	Attributable capacity (MW)	Ground/Rooftop	Connection date	FIT terms
Greece	HELIOSTIXIO SA	1.082	100%	1.082	Ground	September 2012	EUR 0.215/kWh
Greece	HELIOPHRISI SA	1.988	100%	1.988	Ground	June 2012	EUR 0.215/kWh
Greece	THERMI SUN SA	4.400	100%	4.400	Ground	June 2012	EUR 0.215/kWh for the 3.4MW and EUR 0.25/kWh for the 0.7MW
Japan	Ibaraki	0.2744	100%	0.2744	Ground	December 2014	JPY 36/kWh
Italy	ItalsolarS.r.l.	0.993	100%	0.993	Ground	December 2009	EUR 0.325/kWh
U.K.	Cairnhill Solarfield Limited	3.0906	100%	3.0906	Ground	February 2016	1.3 ROCs
U.K.	Emotion energy Solar One Limited	4.971	100%	4.971	Ground	March 2016	1.3 ROCs
US	Hawaii 101-1	0.71	100%	0.71	Ground	June 2022	<500kW: \$0.238/kWh
Total		17.51		17.51			

* In Greece, the PPA agreements fix the FIT during the first 20 years of operation and will drop to EUR 0.09/ KWh after the 20th year for the next 7 subsequent years. The FIT will be charged based on the relevant law in force in Greece. The current law in force is law4254/2014. According the monthly FIT statements by the electricity supply bureau in Greece, the FIT range of the PV plants was EUR0.19–0.20/kWh in 2014.

Solar Projects Under Construction*

Country	Our equity holding	Number of solar projects	Attributable capacity (MW)	Ground/Rooftop	Scheduled Connection date	FIT terms
US	100%	1	1.8	Ground	2023	>500kW: \$0.236/kWh
US	100%	4	10.24	Ground	2023	N/P
Total		5	12.04			

* Intended by us to be BT projects in 2022 and 2023 and may be held as our IPP projects upon completion of construction if we determine that the return of owning the projects and selling electricity is more attractive.

As total capital expenditures may be affected by various factors including, among others, increases in cost of key equipment and materials, failure to obtain sufficient financing, unexpected engineering or environmental issues as well as changes in regulatory requirements, actual total capital expenditures may deviate significantly from such estimates. We expect to finance construction of these projects using cash from our operations and private placements, bank borrowings, financial leases as well as other third-party financing options.

Solar Projects in Announced Pipeline*

As of April 14, 2023, we were in the process of obtaining relevant regulatory approvals for the following self-developed and acquired solar projects:

- a 10.24 MW project in the state of Hawaii, U.S. and 6.8 megawatt (MW) solar photovoltaic (PV) and 5.45 megawatt hour (MWh) energy storage project in the state of Massachusetts, U.S.;
- a 117MW project in Maryland, US.
- A 78.4MW project in Illinois, US.
- 10 x 1MW projects at the prefecture of Fthiotida, near to town of Domokos, at central Greece (their development is in progress and waiting for the interconnection terms and licenses);

* Our project portfolio excludes projects for which we provide EPC services but in which we do not own any equity interest or do not expect to acquire and excludes projects we have disposed of.

Featured Markets

- **U.S.** As of April 14, 2023, we have 12.04 MW of projects under construction and 215.14MW of PV projects and 5.45 megawatt hour (MWh) energy storage project in announced pipeline.
- **U.K.** As of April 14, 2023, we owned 2 solar projects in operation with a total capacity of 8.1MW. In the U.K., all of the projects in our portfolio are eligible for FIT.
- **Greece.** As of April 14, 2023, we own twelve (12) operating solar projects with a total capacity of 33.8 MW, all of which belong to seven (7) different Greek societe anonymes. Four (4) societe anonymes, owned by Sinsin which was deconsolidated in 2017, collectively own eight (8) of the twelve (12) operating solar projects. We have 10MW projects at central Greece in announced pipeline. In Greece, all of the projects in our portfolio are eligible for FIT. In March 2019 and November 2019, we acquired solar projects of 1.988 MW and 4.4 MW, respectively.
- **Japan.** As of April 14, 2023, we have 0.2744 MW of solar project in operation. In Japan, all of our projects are eligible to receive FIT.
- **Italy.** As of April 14, 2023, we have 0.993 MW of solar projects in operation. In Italy, our project is eligible to receive FIT.

Acquisition of Solar Projects

Our board of directors has formulated a uniform standard for assessing target assets with respect to the acquisition of solar projects, and such standard may be adjusted based on our Company's business, financial condition and results of operations from time to time. See "[Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#)- Operating Results-Recent Acquisition Activities" on the projects we have acquired or expect to acquire. Our board of directors considers the following criteria when assessing potential acquisitions, among others:

- the internal rate of return of the project prior to leverage, taking into consideration applicable FIT or PPA rate, and other applicable government incentives;
- our ratio of debt-service coverage;
- the solar irradiation hours of the project, after discounting for performance;
- the use of financeable and reliable brands for and technical specifications of the key components, including modules, invertors, mounting systems, racks/tracking systems, and EPC integration services;
- any performance guarantees required, as well as any compensation for failing to perform;
- clear and trustworthy opinions from third-party professionals after detailed technical, financial, tax and legal due diligence; and
- reasonable payment terms matching relevant milestones.

Market Due Diligence

We aim to select solar projects located at sites with long solar irradiation hours, high energy demand, good supporting infrastructure, favorable tariff regimes, local government support and appropriate topography for construction. We systematically analyze land cost, solar irradiation, grid connection capacity, land and property status, government support, availability of project financing and any other project information that would impact the overall economic return of the project. We target projects that we believe to have appropriate balance of financial returns, costs and risks.

Permit Development Process

The permit development process is the process of obtaining all required permits, certifications and approvals from relevant government authorities for solar project development. As of December 31, 2022, most of our solar projects in operation had been undertaken by us as a secondary developer.

We acquire solar projects under development by third parties which have secured land use rights, development permits, or even begun construction. We typically learn about potential projects suitable for secondary development from our business partners, national or local governments, industry publications, overseas engineering exhibitions or overseas business liaison organizations. Our criteria for sourcing solar projects include land cost, solar irradiation, availability of FIT benefits or other government incentives, grid connection capacity, local financing opportunities and other project information. The selection process involves detailed due diligence into those third parties' relevant company documentation, financial projections and the legal status of permits already secured by the project.

After an acquisition, we continue to develop the project through grid connection as our own. We pursue secondary permit development in markets with relatively liquid markets for energy permits transfer, thus allowing a smooth transfer of pre-operational solar assets from third-party developers to us. Under certain circumstances, we negotiate site acquisition, preliminary permits, grid connection agreements and PPAs for projects under our secondary development model depending on the development stage when we acquire them.

Permit Development Steps

The following sets forth each step of our permit development:

- **Evaluating project sites and location**-The critical factors for evaluating the site of a solar project include its solar irradiation, its proximity to a grid connection point, zoning regulations and its general geographic and topographic features. If a project site is suitable for development or acquisition, our regional development team submits a site assessment report on the land and other related information to our management for evaluation and approval.
- **Due diligence**-Our in-house technical and EPC team, along with third-party experts we contract as needed, examine project items such as engineering and design specifications, technical risks and solar irradiation and environmental analyses. We pay special attention to potential delays and cost overruns, grid capacity and additional costs which may not be captured in the technical design. We also ensure that a project has clean legal titles to the permits and other permissions it has secured. In all cases, we ensure that local regulations allow us to properly carry out our business intentions for a project, whether by allowing us to hold the project under our IPP model or transfer it under our BT model.
- **Market considerations**-We target projects which have appropriate balance of financial returns, costs and risks. Important factors include, the costs of maintenance, local taxes and fees, and the availability of applicable FIT, local credit or other refinancing options. Our financial teams conduct financial forecasts based on information about the financial prospects of the solar project and the local energy market to make a profitability estimate and adjust our capital plan accordingly.
- **Permitting**-Permit and licensing requirements vary depending on the jurisdiction of the solar project, but the key permits, licenses and agreements typically required for solar projects include land acquisition or lease contracts, environmental impact assessments, building or rezoning permits, planning consents, grid connection contracts and PPAs. We work closely with relevant government and private stakeholders to secure all necessary permits to develop a project, including local or regional planning authorities, electric utilities, local communities, environmental agencies, as well as health and safety agencies.

Project Financing

A solar project sponsor typically sets up a project company as a special purpose vehicle to own a particular solar project and arrange for project financing. We typically enter into contracts and other agreements under the name of the project company, which facilitates project financing by isolating the project and its assets, and any potential securitization requirements, from our broader global business.

The construction cost of a project is mainly funded by our working capital, and to a lesser extent, funded through bank borrowings in the year ended December 31, 2022. We seek to negotiate favorable credit terms with our equipment suppliers and EPC contractors when possible, such that payment is not due until several months after construction and grid connection are complete. Our working capital dedicated towards a particular project would be generally available to us for other purposes if needed, and would not be considered restricted cash isolated at that project. We also have given guarantees to the lenders on certain project financings. However, none of our cash and cash equivalents have been collateralized to guarantee such project financings.

We generally seek to arrange debt financing for our solar projects from local banks and financial leasing companies in countries that are more open and receptive to renewable energy investments.

Engineering, Procurement and Construction

Given the multi-jurisdiction coverage of our project portfolio, we choose to utilize our EPC capabilities or contract third party EPC contractors to service our own projects, based on our cost analysis taking into consideration of locations, topographical conditions as well as the quality and competition

of local EPC service providers.

Our Operation and Maintenance Business

We operate and maintain solar projects connected to the grid, especially those we have provided EPC services to. We may choose to contract third party O&M contractors to service our own projects, based on our cost analysis taking into consideration of locations, topographical conditions as well as the quality and competition of local EPC service providers. We regularly maintain solar projects for our customers to ensure that these projects operate in good condition and comply with the recommendations issued by the grid company in order to remain connected.

By operating the projects effectively and efficiently, we reduce down time and increase electricity output. A project's major lifecycle costs mainly consist of maintenance fee and depreciation of modules, inverters and transformers. We monitor electricity production and any incidents or abnormalities which may impede normal operation. We adjust production levels based on the available capacity of the grid.

Our Electric Vehicle (EV) Business

On November 12, 2020, we completed the acquisition of Phoenix Cars LLC and Phoenix Motorcars Leasing LLC (together, "Phoenix").

Phoenix, doing business as "Phoenix Motorcars" through its wholly owned subsidiaries, Phoenix Cars LLC, Phoenix Motorcars Leasing LLC, and EdisonFuture Motor, Inc., currently designs, assembles, and integrates electric drive systems and light and medium duty electric vehicles ("EVs") and markets and sells electric vehicle chargers for the commercial and residential markets. Phoenix operates two primary brands, "Phoenix Motorcars" focused on commercial products including medium duty vehicles, chargers and electric forklifts, and "EdisonFuture" which intends to offer light-duty vehicles. Over the years, we have served over 42 fleet customers with a variety of needs, providing customized products to complete essential business functions. As of December 31, 2022, we have delivered a total of 116 EVs, representing what we believe is the largest number of Class 4 cutaway medium duty electric shuttle bus deployments in the U.S. and the most electric vehicles deployed on the Ford E-Series chassis. With over four million zero-emission miles accumulatively driven by the vehicles we delivered, we have gained significant industry experience, distinct expertise and extensive knowledge in R&D, production, commercialization, customer engagement and validation of light and medium duty EVs, enabling us to drive continued design enhancements and innovations in our current and future generations drivetrain systems and other products. As of December 31, 2022, our backlog of approximately 61 orders consists of 56 vehicles and 5 electric drive system kits. The order backlog represents \$12.22 million of revenue, consisting of \$11.88 million for vehicles and \$0.34 million for electric drive systems.

Our EV buses and trucks are available in a range of configurations, including shuttle buses, Type A school buses, utility trucks, service trucks, flatbed trucks, walk-in vans, and cargo trucks. Our delivery customers include major airports, airport shuttle operators, hotel chains, seaports, universities, municipalities, and large corporations.

We believe that our EVs offer owners and fleet operators significant benefits, including:

- *Lower Ownership Cost.* Electric vehicles cost less in total to own, operate, and maintain than diesel, gasoline and natural gas combustion-powered vehicles, even though the initial purchase price (after subsidies) is somewhat higher.
- *Less Maintenance, Lower Operating Cost, Greater Safety.* Because electric motors have few moving parts and do not need liquid fuels or lubricants, they generally require less maintenance, are less expensive to operate, and avoid exposure to or spills or need to dispose of hazardous hydrocarbon fluids.
- *Zero Vehicle Emissions.* EVs enable customers to satisfy government mandates limiting vehicular emissions.
- *Positive User Recognition.* Our customers' use of EVs may improve their public images, thereby conferring a competitive advantage.
- *Improved Driver and Passenger Comfort.* Electric vehicles run more quietly than combustion-powered vehicles, enhancing operator and passenger comfort.

We assist customers with all aspects of fleet electrification, including recommending battery power levels needed for the customer's applications; advising regarding necessary infrastructure, such as types of external chargers required and their locations, and whether the customer's facilities have sufficient power for charging; and assistance with the customer's contractors that install infrastructure.

We sell our vehicles to fleet customers directly; retail sales of vehicles carrying Forest River, Inc. bodies, (e.g., Starcraft bus bodies and Rockford truck bodies) are made through Creative Bus Sales, one of the largest distributors of buses in the United States.

On June 7, 2022, Phoenix priced its initial public offering (the "IPO") of 2,100,000 shares of its common stock, par value \$0.0004 per share, at \$7.50 per share. The shares are listed on The Nasdaq Capital Market and trade under the ticker symbol "PEV" beginning on June 8, 2022. As of the date of this report, we indirectly owned approximately 82.6% of the outstanding voting power of the outstanding common stock of Phoenix through EdisonFuture, Inc., which is 100% owned by SPI Energy Co., Ltd.

Our Business of Residential Roofing and Solar Installations

On January 6, 2021, SJ US purchased of all work-in-progress consumer contracts of Petersen-Dean, Inc. ("PDI") for a consideration of \$0.88 million in a court-approved agreement. On February 25, 2021, SJ US closed the acquisition of substantially all operating assets of Petersen-Dean including certain construction contracts with work-in-progress billings, fixed assets, intellectual properties and other assets, for a total cash consideration of \$6.85 million, plus the assumption of \$11 million of outstanding balance under an account receivables financing, net off by accounts receivables pledged for the liability with net balance of PDI of \$11.7 million. PDI specializes in residential roofing and solar installations across the U.S., and after acquisition, SJ US operated the business with its own brand and earned revenue of \$25.9 million for the year ended December 31, 2022.

Our "Made-in-America" Solar Modules Manufacturing Business

SJ Technology, our Sacramento, California-based solar module manufacturing subsidiary, opened our first US solar module assembly factory in January 2022 in McClellan Park, California, which commenced pilot production in the second quarter of 2022 and began delivering Solar4America brand modules to customers weekly during the third quarter of 2022. We achieved installed capacity of 650MW per year by the end of 2022, assuming the installed production line is running at full shift. SJ Technology intends to sell most of our American-made solar modules under our own "Solar4America" brand, to distributors, project developers and system integrators, and a small portion of solar modules on an OEM basis. We subleased existing solar module manufacturing facilities with a total floor area of 139,100 square feet located in McClellan Park, acquired certain pieces of solar module assembly equipment from Sunergy California LLC, and additional solar module assembly equipment from YingKou JinChen Machinery Co Ltd and Wuxi Autowell Supply Chain Management Co Ltd. to expand our capacity at the McClellan Park facility. In August 2022, we subleased additional space with a total floor area of 56,000 square feet, adjacent to SJ Technology's current solar module manufacturing facility at McClellan Park. The expansion will enable us to meet the strong demand for its American-made solar modules. We expect that the production capacity of SJ Technology will be further increased to 2.4 GW per year by the end of 2023 as the result acquiring and putting into operation additional solar module assembly equipment and coupled with the utilization of the additional 56,000 square foot facility in McClellan Park, California and well as opening a new facility on the East Coast of the United States.

Inflation Reduction Act of 2022 - New and Expanded Production and Tax Credits for Manufacturers and Projects to Support Clean Energy

On August 16, 2022, President Biden signed into law the Inflation Reduction Act of 2022 (the "IRA"). The IRA contains provisions which we expect will have a significant impact on the development and financing of clean energy projects in the United States over the next ten years. The IRA includes a number of key changes relevant to clean energy in the United States, among them the extension of the Investment Tax Credit and Production Tax Credit and the addition of expanded tax credits for other technologies and for manufacturing of clean energy equipment as well as terms allowing parties to more easily monetize the tax credits. The IRA also includes some targeted incentives intended to encourage development in low-income communities and the use of domestically produced materials and compliance with certain prevailing wage requirements. The IRA contains a two-tiered credit-amount structure for many applicable tax credits. Specifically, many of the credits have a lower base credit amount that can be increased up to five times if the taxpayer can satisfy applicable prevailing wage or apprenticeship requirements. In general, under the prevailing wage requirements, the IRA requires all laborers, mechanics and workers to be paid the prevailing wage during project construction (and, during the credit term, for repairs and alterations). Separately and subject to certain exceptions, to meet the apprenticeship requirements, qualified apprentices have to perform an applicable percentage of total labor hours for project construction. Further, the IRA establishes certain options to cure the failure to meet either the prevailing wage or apprenticeship requirements.

We believe that two areas of the IRA will have direct significant benefits for us. First, the impact of the new Section 45X of the IRA will be significant to us, especially our SJ Technology business. Under Section 45X, production credits will be available for each eligible solar component that is produced domestically and sold to an unrelated party. Section 45X credits are based on the type of equipment or material manufactured, how much equipment or material is produced, and certain other criteria. We anticipate that Section 45X will spur United States solar manufacturing to a degree that may not yet be fully appreciated. According to Section 45X of the IRA, the Advanced Manufacturing Production Credit (AMPTC) is available for the production of eligible components which includes solar modules, solar wafers, solar cells produced in the United States and sold after December 31, 2022. The amount of the AMPTC for solar modules are mandated to be \$0.07 per module capacity in Wdc. SJ Technology produces "Made-in-America" solar modules under its Solar4America brand. The Section 45X production credit encourages innovation and efficiency because, for example, with respect to certain solar components, credits are tied to the productivity of a solar panel rather than its cost, encouraging companies to manufacture higher-efficiency panels rather than raise prices to increase credits.

Secondly, the Residential Clean Energy Credit under the IRA allows residential customers to subtract 30 percent of solar costs off their federal taxes as a tax credit through 2032. If residential customers install solar energy equipment in their residence any time from 2022 through the end of 2032, they are entitled to a nonrefundable tax credit off their federal income taxes, equal to 30 percent of eligible expenses. There's no dollar limit on those expenses. We believe this increase to a 30% tax credit under the IRA will significantly enhance SJ America's U.S. residential roofing and solar installation business. According to the Department of Energy, the new IRA's language covers the same expenses to be eligible for this new solar tax credit, as those that were declining under the expiring old law, including:

- Solar photovoltaic (PV) panels.
- PV cells used to power an attic fan (but not the fan itself).
- Contractor labor for onsite preparation, assembly, or original installation.
- Permitting fees, inspection costs, and developer fees.
- All equipment needed to get the solar system running, including wiring, inverters, and mounting equipment.
- Storage batteries. (You can claim the tax credit for these even if you buy and install them a year or more after you install the solar system.)
- Sales taxes on eligible expenses.

We believe having our own branded products provides greater opportunities to differentiate us in a competitive market, especially when certain products are in short supply in the market, such as current market conditions for made-in-America solar modules, which we expect will accelerate our brand and product penetration into the U.S. domestic market.

Our solar modules utilize advanced solar technologies, such as the Passive Emitter and Rear Contact or "PERC" technology and full cell technology. We expect that our high-quality manufacturing capabilities will enable us to produce solar modules meeting the industry's highest performance standards, and all of our American-made solar modules sold in North America are UL certified.

Competition

Solar Power Market

The solar power market is intensely competitive and rapidly evolving, and we compete with major international and domestic companies over the development of solar projects. Our major competitors include leading global players such as SunPower Corporation, First Solar, Inc., Canadian Solar, Inc., SunEdison, Inc., SolarCity Corporation, Lightsource Renewable Energy Limited, and regional players such as West Holdings Corporation, Looop Inc., and other regional and international developers.

We believe that we can compete favorably with our competitors given that the key competitive factors for solar project development and operation include, without limitation:

- industry reputation and development track record;
- site selection and acquisition;
- permit and project development experience and expertise;
- relationship with government authorities and knowledge of local policies;
- ability to secure high-quality PV modules and balance-of-system components at favorable prices and terms;
- ready access to project financing;
- control over the quality, efficiency and reliability of project development;
- expertise in permit and project development; and
- expertise in providing EPC and O&M services.

However, we cannot guarantee that some of our competitors do not or will not have advantages over us in terms of greater operational, financial, technical, management or other resources in particular markets or in general. In terms of the broader energy sector, the entire solar industry faces competition from other power generation sources, including conventional sources as well as other emerging technologies. Solar power has certain advantages and disadvantages when compared to other power generating technologies. The advantages include the ability to deploy products in many sizes and configurations, install products almost anywhere in the world, provide reliable power for many applications and reduce air, water and noise pollution. Yet other energy sources have advantages which may result in electric utilities, grid companies or other off-takers to enter PPAs or other electricity purchase arrangements with companies specializing in those energy sources rather than us or other companies specializing in solar power.

Electric Vehicle (EV) Business

Competition in the light and medium-duty truck industry is intense, as new regulatory requirements for vehicle emissions, technological advances, and shifting customer demands are pushing the industry towards zero-emission solutions.

Phoenix competes with a number of commercial EV manufacturers, including those such as Lightning eMotors, GreenPower Bus, SEA Electric and Arrival. Several major companies, including BYD, Ford, General Motors, Tesla and Daimler have begun entry into the commercial EV market. In addition, many of the aforementioned companies, along with others, such as Volvo, BYD, Hyundai, Honda, and Fiat participate in the hybrid combined electric and gasoline powered vehicle business, which includes commercial vehicles that may compete with Phoenix. Most of our current and potential competitors have greater financial, technical, manufacturing, marketing, and other resources than we do. They may be able to deploy greater resources to the design, development, manufacturing, distribution, promotion, sales, marketing and support of their electric truck programs. Additionally, those competitors have greater name recognition, larger sales forces, broader customer and industry relationships, and other resources than we do.

Our Business of Residential Roofing and Solar Installations business and Australia Distribution Business

As PV and energy storage technology advances and the average system costs decrease, in many cases the residential or small business owners of solar systems have effectively achieved grid parity for their systems. Aided by smart meter and virtual power plant technologies such systems can be an attractive alternative to electricity grid in many localities. We expect traditionally strong residential solar markets such as California and Australia to continue to grow. As the overall market grows we expect our costs of sales to decrease and our revenue and profitability to increase.

Suppliers

There are numerous suppliers of PV modules in the solar power industry, and we have adopted a supplier-neutral approach. For our global project development business, we select the suppliers based on whether we could obtain high-quality PV modules and balance-of-system components at favorable prices and payment terms. For global project development business, we procure our PV modules from a broad range of suppliers including Trina Solar Limited, LONGi Solar, Zhongli Talesun Solar Co., Ltd, Hanwha Q Cells GmbH, and Chint, among others. we are planning to procure PV modules from our own brand Solar4America to further increase the profitability.

In March 2021, we began delivering our third generation EVs, featuring our new, Romeo Power, Inc. modular battery packs, giving customers choices among 31KwH, 63KwH, 94KwH, 125KwH, and 156KwH batteries. Our ZEUS 300 EVs are built on the Ford F-450 chassis, with Romeo Power battery and Dana TM4 SumoTM MD motors, and BTC Power battery chargers. While the relationships with our key suppliers remain strong, we conduct evaluation of all suppliers on regular basis based on their quality, reliability, cost effectiveness, warranty standards, shipping standards and set up mitigation plan accordingly.

SJ Australia purchases its products from the best in class PV manufacturers that offer products with strong market demand that, generally, allow us to sell the products at higher gross margins. Our leading brands in each product category include, for inverters, Sungrow, Fronius and SMA; for solar panels, Trina and LONGi, for battery storage systems, Tesla and Sungrow; and for BOS and mounting, Tigo, Clenergy, Wallbox and Mibet. SJ Australia actively reviews its product portfolio to discontinue products with low volume, low margin, or poor performance records. SJ Australia enters into agreements with its suppliers during the ordinary course of business.

SJ America purchases materials from leading distributors in the construction and PV industries. We also purchase key solar components, such as panels and batteries from suppliers in Asia and in the US.

SJ Technology has begun to offer its Solar4America private-label as its standard product, with third party products offered as premium choices for consumers. SJ Technology has entered into purchase and other agreements with various suppliers including Jincheng, Sunergy and Autowell to purchase additional manufacturing equipment and expand of its production capacities.

The Company enters into agreements with its suppliers during the ordinary course of business.

Customers and Marketing

We have historically provided EPC and O&M services, a line of business we are still engaged in when we develop and operate the solar projects. We are also selling electricity to the grid under our IPP model as well as selling solar projects under our BT model. For our global project development business, purchasers of our BT projects included utility companies, independent power developers and producers, commercial and industrial companies as well as investors in the solar business. For our Orange Power business, we sell electricity to power companies and other electricity off-takers, including government-owned utility companies, operating in the United States, Greece and Italy under our IPP model. Further, customers of our Australia distribution business include residential ones, towards which we distribute PV modules, balance of system components, solar monitoring systems and inverters.

During the year ended December 31, 2022, there was no sale of PV solar systems.

We promote our reputation by participating in industry conferences worldwide and aggressively sourcing development opportunities in markets with strong growth potential. Members of our senior and local management team routinely meet with industry players and interested investors. Our business development teams around the world have significant experience building business in local markets and actively pursue growth opportunities around the world. We intend to continue to increase our marketing efforts going forward.

We historically engaged in high-profile marketing activities focused on developing our brand awareness not just among the solar business developers who have traditionally been our customers, but also among the general public. Since we have been in solar business for 15 years, we have built our brand awareness and lately we have not engaged in marketing activities.

As one of the early movers in the medium-duty electrification market, Phoenix Motorcars has built a reputation as one of the leading manufacturers in the segment. Our range of vehicles includes all-electric shuttle buses, flatbed trucks, utility trucks, box trucks, service van and custom bodies on a class-4 electric chassis and is used by customers across a wide range of applications including cities, transit agencies, airports, utility agencies, contractors, campuses and other commercial fleets. Phoenix Motorcars has particularly good awareness among shuttle bus customers and has the highest number of class-4 shuttle buses deployed. Further Phoenix also partnerships with industry leaders like Forest River, the largest shuttle bus manufacturer in the country and Creative Bus Sales, the largest bus dealership network to jointly sell and service the shuttle bus product. Being a sunrise industry, most of Phoenix's fleet customers are first time EV users and Phoenix provides end-to-end electrification solutions to support their efforts. This includes not just providing vehicles, but also supporting with route planning, charging infrastructure planning, charging equipment and telematics solutions for in-service vehicles.

Seasonality

Demand for solar power products tends to be weaker during the winter months partly due to adverse weather conditions in certain regions, which complicate the installation of solar power systems. Our operating results may fluctuate from period to period based on the seasonality of industry demand for solar power products. Certain aspects of our operations are also subject to seasonal variations. For example, we may schedule significant construction activities to connect solar projects to the grids prior to a scheduled decrease in FIT rates in order to qualify for more favorable FIT policies.

The electric Vehicles business is not seasonal, but application and decision timelines of key incentive programs like the California HVIP program and the annual Federal Transit Administration's LowNo program impact the timing of purchase orders for applicable customer segments.

Insurance

We maintain the types and amounts of insurance coverage that we believe are consistent with customary industry practices in all the countries where we operate. Our insurance policies cover employee-related accidents and injuries, property damage, machinery breakdowns, fixed assets, facilities and liability deriving from our activities, including environmental liability. We maintain business interruption insurance for interruptions resulting from incidents covered by insurance policies. We have not had any material claims under our insurance policies that would either invalidate our insurance policies or cause a material increase to our insurance premiums. We cannot assure you, however, that our insurance coverage will adequately protect us from all risks that may arise or in amounts sufficient to prevent any material loss.

Regulations

We operate in multiple jurisdictions, including the U.S., Japan, the U.K, Greece, Italy and Australia. We are therefore subject to complex laws, regulations and policies promulgated by the governments and government-run utilities of these jurisdictions, including FIT regulations, clean energy incentive rules and programs, laws and regulations that apply to all power producers, regulations that specifically apply to solar power project operators, EPC service providers as well as solar kit distributors, tax regulations and intellectual property laws, among others. Likewise, our hemp and CBD businesses are subject to various laws, regulations and guidelines by governmental authorities relating to, among other things, the manufacture, marketing, management, transportation, storage, sale, pricing and disposal of cannabis, U.S. hemp and cannabis-based products, and also including laws, regulations and guidelines relating to health and safety, insurance coverage, the conduct of operations and the protection of the environment.

Legal Proceedings

From time to time, we are involved in various other legal and regulatory proceedings arising in the normal course of business. While we cannot predict the occurrence or outcome of these proceedings with certainty, we do not believe that an adverse result in any pending legal or regulatory proceeding to which we are a party, individually or in the aggregate, would be material to our business, prospects, financial condition, cash flows or results of operations other than the following:

SINSIN Disputes

There is dispute between the Company and SPI China (HK) Limited on one hand (hereinafter collectively, "SPI") and SINSIN Europe Solar Asset Limited Partnership and SINSIN Solar Capital Limited Partnership on the other hand (hereinafter collectively, "SINSIN") with respect to a share sale and purchase agreement dated September 9, 2014 ("SPA") entered into by and between SINSIN, as vendors, and SPI, as purchasers, in relation to all of the shares in Sinsin Renewable Investment Limited, a company registered in Malta (for purpose of this section, "SRIL"). The SPA is governed by Maltese law and any disputes thereunder shall be referred to arbitration in Malta. SRIL is the direct and/or indirect owner of four (4) Greek companies under the names "JASPER PV MACEDONIA ENERGIAKI SOCIETE ANONYME", "ORION ENERGIAKI SOCIETE ANONYME PHOTOVOLTAICON ERGON", "ASTRAIOS ENERGIAKI SOCIETE ANONYME PHOTOVOLTAICON ERGON", "PHOTOVOLTAICA PARKA VEROIA I SOCIETE ANONYME" (hereinafter collectively, "4 SPVs"). The 4 SPVs collectively own a number of photovoltaic parks in Greece having a total power output of 26.57 MW.

Proceedings were initiated both in Greece and Malta in relation to this dispute.

Proceedings in Greece

In particular, the following judicial proceedings were initiated in Greece and are pending as of the date of this annual report:

A. SINSIN's Injunction Petition against the 4 SPVs dated January 26, 2018, with General Submission No 8118/2018, which was heard on the March 20, 2018, before the Athens One-Member First Instance Court and on which Judgement No 4212/2018 was issued on June 25, 2018.

This Interim Measures Judgment ordered, *inter alia*, the following:

(A) It suspends the force of the extraordinary General Meetings of the shareholders of the 4 SPVs dated December 19, 2017 on the appointment of their members of Board of Directors, until the issuance of a final judgment on the lawsuit filed by SINSIN on March 14, 2018 for the annulment of the extraordinary General Meetings of the shareholders of the 4 SPVs dated December 19, 2017.

(B) It appoints an interim management of the 4 SPVs, consisting of two members elected by SINSIN (Dejun Ye and Fan Yang) and one member elected by the 4 SPVs (Hoong Khoeng Cheong), with the following, exclusively defined, competences: (a) to represent judicially and extra-judicially the 4 SPVs before any public authority and court, (b) to manage the bank accounts of the 4 SPVs, in order to, exclusively and solely, proceed with the payment of existing and current obligations of the 4 SPVs towards third parties, arising from their regular management (liabilities towards the State, employees, social security institutions, private creditors, banks), excluding the payment of any price of the shares that were transferred from SINSIN to SPI pursuant to the above-mentioned share sale and purchase agreement dated September 6, 2014, (c) to collect the proceeds of the 4 SPVs, especially from selling electric energy from the photovoltaic parks of the 4 SPVs to the Operator of Electricity Market ("LAGIE"), which (proceeds) should be subsequently deposited to the bank accounts of the 4 SPVs, with the exclusive purpose being the payment of the above under element b' obligations of the 4 SPVs (i.e., not for the payment of the purchase price of the shares transferred by SINSIN to SPI pursuant to the above-mentioned share sale and purchase agreement dated September 6, 2014.)

(C) It allows the petitioners to register with the Greek General Commercial Registry ("GEMI") the appointed interim management of the 4 SPVs with the above competences.

B. SINSIN's and Mr. Dejun Ye's lawsuit against the 4 SPVs dated March 14, 2018, with General Submission No. 25276/2018 (the "Annulment Lawsuit"). By virtue of the Annulment Lawsuit, the petitioners request the annulment of the December 19, 2017 General Assemblies' Resolutions of the 4 SPVs, which appointed a Board of Directors elected by their shareholders SRIL, Veltimo Limited and Photovoltaica Parka Veroia 1 Malta Limited, companies belonging to SPI.

SPI and their subsidiaries opposed the above-mentioned petition. SPI and their subsidiaries SRIL, Veltimo Limited and Photovoltaica Parka Veroia 1 Malta Limited filed an Additional Intervention in the above pending trial under General No. 40772/2018 in favor of the 4 SPVs requesting the rejection of the Annulment Lawsuit.

By virtue of its Decision No 2318/2019, the Athens Multimember Court of First Instance suspended the issuance of a definitive judgment on SINSIN's petition until the issuance of a final decision on the case pending before the Malta arbitration tribunal with respect to the SPA.

C. By virtue of a petition under General Submission No 7294/2018 dated January 25, 2018 filed by SINSIN before the Athens Local Court against SRIL, Veltimo Limited and Photovoltaica Parka Veroia 1 Malta Limited, SINSIN lacking an enforcement title, requested the above Athens Local Court to allow them to proceed to an auction of the pledged shares of the 4 SPVs, in order to satisfy their claim amounting to EUR 38.3 million, plus interest and expenses, for the outstanding purchase price of the 4 SPVs shares under the above-mentioned share sale and purchase agreement dated September 6, 2014.

SRIL, Veltimo Limited and Photovoltaica Parka Veroia 1 Malta Limited opposed the above-mentioned petition.

The above petition was heard on October 23, 2018. The Athens Local Court issued Decision No. 350/2019, which suspended the issuance of a definitive judgment on SINSIN's petition until the issuance of a final decision on the case pending before the Malta arbitration tribunal with respect to the SPA.

Proceedings in Malta

In June 2018, the Company, as Claimant, filed arbitration proceedings in Malta against SINSIN as respondents for an alleged breach of a share sale and purchase agreement dated September 6, 2014 entered into by and between the respondents as sellers and the claimant as purchaser in relation to all of the shares in SRIL. The claimant is requesting the payment of damages from the respondents.

The respondents have filed separate arbitration proceedings in Malta against the Company, requesting payment of the balance of the purchase price due in terms of the share purchase agreement mentioned above (stated to be EUR38,054,000) together with interest. The Company contested these claims. Meanwhile, SINSIN obtained a precautionary garnishee order against the Company as security for its claims and had the same order served on SRIL with a view to freezing any payments that may be due by SRIL to SPI. In February, 2019, SINSIN also obtained the issue of a precautionary warrant of prohibitory injunction prohibiting SPI from selling or otherwise transferring its shares in SRIL.

On October 29, 2020, awards were issued in both cases, pursuant to which the tribunal dismissed all of SPI's claims and admitted SINSIN's counterclaim for payment of the balance of the price of €38,054,000, with interest at 6% accruing from November 30, 2015, on half of this amount, and from June 20, 2016, on the other half. SINSIN's claims for additional damages were rejected (the "First Award"). Costs of the case filed by SPI (case 5320/18) are to be borne by SPI, while the costs for case 5532/18 are to be borne 80% by SPI (the "Second Award", First Award and Second Awards collectively as "Awards"). On November 13, 2020, SPI filed Appeal Applications to appeal the awards with the Court of Appeal (Inferior Jurisdiction). The Appeal were eventually heard on 23 April 2021. By virtue of two judgements delivered contemporaneously on 12 November 2021, the Court of Appeal dismissed both Appeals filed by SPI on the procedural ground of non-appealability of the Awards. Following consideration of the appeal judgements, the application for retrial was filed on the ground of wrong application of the law. The applications for retrial were filed on 29 November 2021 together with applications for the suspension of the execution of the Awards pending the determination of the retrial applications. The latter applications were accepted by the court pending the consideration of the applications for retrial. Following a hearing held on 16 March 2022 during which the parties were given the opportunity to make final submissions with regard to the application for retrial, on 30 March 2022 the Court of Appeal delivered its final judgement by virtue of which the applications for retrial of the Appeal were rejected. In consequence, the order for the suspension of the enforcement of the Awards was also lifted. While no further appeal or right of retrial exists in Malta, SPI is yet to obtain advice as to whether any other options are available to it to suspend the enforcement of the Awards. Meanwhile, SPI is also taking advice with regard to the time that will be required for SINSIN to complete the procedures necessary for the enforcement of the Awards in Malta and in Greece, and preliminary indications are that relevant procedures are unlikely to be completed during the course of 2023. Confirmatory advice in this regard is pending, however.

Proceedings in US

On November 3, 2022, SinSin have filed a petition for recognition of the Awards in the US (the "Action"), with a view to obtaining the option to enforce the awards in US if and when required. Through the Action, SinSin petitions under the New York Convention to confirm the Awards issued on October 20, 2020, in Malta arising out of the contract dispute relating to SPA and seeks a judgment from the United States District Court confirming the Awards. The Action was initiated by SinSin on November 3, 2022. The Company filed a Response on January 2, 2023, contesting the Petition. As of the Date of this report, no hearing date has been set on the Petition, and the Court has not otherwise ruled on it. Given the early stage of the Action, and pending reply by SinSin to the Company's Response, or further action by the Court, we believe the probable outcome of this matter is uncertain but the Company is actively engaging the settlement discussion with Sinsin and a resolution will be expected within 2023.

Shengrun Dispute

Solar Juice USA Inc. ("SolarJuice"), a subsidiary of the Company, submitted a complaint in the local court in the county of Santa Clara in the State of California on or about June 11, 2020 against Shengrun Int'l Industry Group, Inc., a California corporation ("Shengrun") and Sophie Harrison, a resident of the State of California and the purported controlling person of Shengrun. In March 2019, SolarJuice and Shengrun entered into a real property purchase agreement pursuant to which SolarJuice shall purchase from Shengrun a real property located in Santa Clara in the State of California. Subsequently, SolarJuice made a down payment of \$3,132,000 to Shengrun for the proposed transaction, and Sophie Harrison provided personal guarantee that if Shengrun does not convey the property to SolarJuice or if SolarJuice withdraws from the transaction, she would be personally liable for the return of the down payment to SolarJuice. As of the date hereof, the subject property has not been conveyed to SolarJuice, neither has Shengrun or Ms. Harrison refunded the down payment to SolarJuice. Counsel for SolarJuice on this matter reasonably expects that the court shall render a verdict against Shengrun and Ms. Harrison personally (as related to the personal guarantee) and in favor of SolarJuice. However, the counsel does not have the information to assess whether Shengrun or Ms. Harrison has the assets available for the governmental authorities or the Company to enforce such verdict.

AHP Dispute

The Company and its various subsidiaries are listed as defendants on a claim for fraudulent transfer pending before superior court of the state of Arizona. This dispute involves the transfer of 15% of ownership of Arizona Hay Press, LLC. ("AHP") claimed to be originally owned by Woods & Sons, Inc. as Plaintiff. Presently, AHP primary asset is a 120 acre parcel of land. In May 2019, The Company and its various subsidiaries entered into various agreements pursuant to which the Company acquired all shares of AHP. The legal process is ongoing with resolution expected during the calendar year 2023.

Sulus Dispute

The Company is respondent on a claim pending in arbitration before ADR Services, Inc. SPI Solar, Inc., agreed to purchase from Sulus LLC certain solar photovoltaic Projects under a Membership Interest Purchase Agreement ("MIPA") dated July 15, 2019. The MIPA contained a project-by-project purchase price escalation clause conditioned upon each Project meeting certain requirements and being awarded into Oregon's Community Solar Program. Sulus LLC alleges that four Projects, Belvedere Solar LLC, Manchester Solar LLC, Dover Solar LLC and Clayfield Solar LLC, have met the MIPA conditions for the price escalation, and that two Projects, Cork Solar LC and Waterford Solar LLC, still may meet the price escalation conditions. For the four Projects alleged to meet the conditions, Sulus LLC alleges additional compensation is due, and for the two Projects that Sulus LLC alleges may meet the conditions, Sulus LLC estimates additional compensation is due as well. SPI Solar, Inc., denies the allegations, that the MIPA conditions have not been met, and specifically that any of the Projects have yet been awarded into Oregon's Community Solar Program. It is also SPI Solar, Inc.'s position that the time for the Projects to meet the conditions for the price escalation in the MIPA has passed. On December 13, 2021, an order from the arbitrator was issued and awarded the full amount to Sulus LLC. The cross petitions to enter judgment on the award and to vacate it were timely filed by Sulus LLC and the Company, respectively. On September 8, 2022, Multnomah County Court issued a judgment in favor of Sulus in the principal amount of US\$1,400,000. On January 20, 2023, the parties to the litigation entered into a confidential settlement agreement.

Streeterville 2022 Note Dispute

On February 16, 2023, One of the Company's convertible bondholder, Streeterville Capital, LLC ("Streeterville") delivered a Redemption Notice to the Company to redeem \$350,000 of a promissory note entered into on April 8, 2022 with a deadline to pay the Redemption Amount by February 22, 2023. The Company failed to pay the Redemption Amount on time and such failure to pay is an Event of Default under the 2022 Note. Due to this Event of Default, (i) the base interest of the 2022 Note was increased to 15% per annum; (ii) the outstanding balance of the 2022 Note was increased by 15%; and (iii) the entire outstanding balance of the 2022 Note was accelerated and due on March 3, 2023. The Group failed to pay the outstanding balance of the 2022 Note by March 3, 2023 and as a result, Streeterville filed a complaint in the third judicial district court of Salt Lake County, requesting for actual

damages in an amount not less than \$2.7 million, plus applicable interest, damages, charges, fees, attorney fees, and collection costs. On March 31, 2023, a hearing was held and the temporary restraining order requiring the Company to pay the 2022 Note in full from the proceeds of the IPO of its subsidiary, SolarJuice Co., Ltd. The Company has engaged attorneys to act as legal representatives for this case while actively negotiating the settlement discussion with Streeterville and a resolution is expected to be within 2023.

NAAC Dispute

The Company is currently involved in a potential lawsuit against Native American Agricultural Company ("NAAC") regarding our newly set up CBD and hemp business. The Company was required to make a down payment of \$324,125 to NAAC on or before July 31, 2019, and the Company timely made this payment. Subsequently, however, NAAC failed to comply with or perform the Agreement dated as of July 24 2019 entered into by and between CBD and Hemp Group Co., Ltd., a wholly owned subsidiary of the Company, Hemp Biotechnology, Inc. and NAAC. First, in August 2019, representatives of the Company visited the farm where NAAC was growing the hemp. The conditions of the plants and growing operations appeared to be deficient and not up to industry standards. Second, NAAC failed to provide the required Milestone Report and Financial Reports. Finally, NAAC failed to deliver any of the hemp plants by November 30, 2019, or at all, and refused and failed to return Company's down payment and to make whole for the damages the Company has suffered. As such, the Company believes NAAC was in default under the Agreement. The Company sent two demand letters to NAAC on October 25, 2019 and November 25, 2019 respectively without any response from NAAC. Mr. Da Mu Lin and Mr. Yonglei Zhang provided personal guarantee to guaranty the full performance and contractual obligations of NAAC. In March 2022, the Company has filed the complaint against Mr. Da Mu Lin and Mr. Yonglei Zhang for fraud in the inducement, unfair or deceptive trade practices, breach of contract, and unjust enrichment.

However, an unfavorable outcome could have a material adverse effect on our results of operations for a specific interim period or year.

Taxation

The following summary of the material Cayman Islands and United States federal income tax consequences of an investment in our ordinary shares is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change, possibly with retroactive effect. This summary does not deal with all possible tax consequences relating to an investment in our ordinary shares, such as the tax consequences under United States state or local tax laws, or tax laws of jurisdictions other than the Cayman Islands and the United States.

Cayman Islands Taxation

The Cayman Islands currently does not levy taxes on individuals or corporations based upon profits, income, gains or appreciation, and there is no taxation in the Cayman Islands in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to us levied by the government of the Cayman Islands except for stamp duty which may be applicable on instruments executed in, or after execution brought within the jurisdiction of the Cayman Islands. The Cayman Islands is not a party to any double tax treaties that are applicable to any payments made to or by our Company. There are no exchange control regulations or currency restrictions in the Cayman Islands.

Economic Substance Law

Since January 1, 2019, the Cayman Islands adopted certain laws and regulations in response to the Organisation for Economic Co-operation and Development (OECD) Forum on Harmful Tax Practices, which sets the global standard that requires companies to have substantial activities in a jurisdiction (also known as "economic substance"). To date, the Cayman Islands have passed or adopted the International Tax Co-Operation (Economic Substance) Act, (as varied by the Regulations which are defined below and includes any revision thereof or amendment thereto from time to time, the "ES Law"), the International Tax Co-Operation (Economic Substance) (Prescribed Dates) Regulations, 2018, the International Tax Co-Operation (Economic Substance) (Amendment of Schedule) Regulations, 2019 and the International Co-Operation (Economic Substance) (Amendment of Schedule) (No. 2) Regulations, 2019 (collectively referred to as, the "Regulations"), and the updated related guidance was published on July 13, 2020.

A relevant entity conducting any relevant activity must satisfy the economic substance test (the "ES Test") as set out in the ES Law. Failure to comply with requirements of the ES Law may result in substantial fines and/or imprisonment.

Considering SPI Energy is a tax resident in US, the Company has determined that it is not a Relevant Entity for the purposes of the ES Law.

U.S. Federal Income Taxation

Introduction

The following discussion is a summary of U.S. federal income tax considerations of the purchase, ownership and disposition of the ordinary shares. This discussion applies only to holders that hold the ordinary shares as capital assets. This discussion is based on the Code, Treasury regulations promulgated thereunder, and administrative and judicial interpretations thereof, all as in effect on the date hereof and all of which are subject to change, possibly with retroactive effect. This discussion does not address all of the tax considerations that may be relevant to specific holders in light of their particular circumstances or to holders subject to special treatment under U.S. federal income tax law, such as banks, financial institutions, insurance companies, controlled foreign corporations, passive foreign investment companies, tax-exempt entities, regulated investment companies, real estate investment trusts, partnerships and the partners therein, dealers in securities or currencies, traders in securities electing to mark to market, U.S. expatriates, persons who have acquired the ordinary shares as part of a straddle, hedge, conversion transaction or other integrated investment, U.S. Holders (as defined below) that have a "functional currency" other than the U.S. dollar or persons that own (or are deemed to own) 5% or more of our stock. This discussion does not address the alternative minimum tax, the Medicare tax on net investment income or any U.S. state or local or non-U.S. tax considerations or, other than to the limited extent set forth below, any U.S. federal estate or gift tax considerations.

As used in this discussion, the term "U.S. Holder" means a beneficial owner of the ordinary shares that is, for U.S. federal income tax purposes, (i) an individual who is a citizen or resident of the United States, (ii) a corporation, or other entity classified as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or of any state thereof, or the District of Columbia, (iii) an estate whose income is subject to U.S. federal income taxation regardless of its source or (iv) a trust that (1) is subject to the supervision of a court within the United States and the control of one or more United States persons or (2) has a valid election in effect under applicable United States Treasury regulations to be treated as a United States person.

As used in this discussion, the term "Non-U.S. Holder" means a beneficial owner of the ordinary shares that is not a partnership (or entity treated as a partnership for U.S. federal income tax purposes) and not a U.S. Holder.

Treatment of the Company as a U.S. Corporation for U.S. Federal Income Tax Purposes

Even though we are organized as a Cayman Islands exempted company, due to the application of Section 7874(b) of the Code, we are treated

U.S. Holders

Distributions

We do not currently anticipate paying distributions on our ordinary shares. In the event that distributions are paid, however, the gross amount of such distributions generally will be included in a U.S. Holder's gross income as dividend income on the date of receipt to the extent that the distribution is paid out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent the amount of any distribution exceeds our current and accumulated earnings and profits as so computed, it will be treated first as a non-taxable return of capital to the extent of the U.S. Holder's adjusted tax basis in such ordinary shares and, to the extent the amount of such distribution exceeds such adjusted tax basis, will be treated as gain from the sale of such ordinary shares.

Subject to certain conditions, including a minimum holding period requirement, dividends received by individuals and other non-corporate U.S. Holders, generally will be subject to reduced rates of taxation, and dividends paid by us will be eligible for the "dividends received" deduction generally allowed to corporate shareholders with respect to dividends received from U.S. corporations.

Sale or Other Disposition of Ordinary Shares

A U.S. Holder generally will recognize gain or loss for U.S. federal income tax purposes upon a sale or other disposition of the ordinary shares in an amount equal to the difference between the amount realized from such sale or disposition and the U.S. Holder's adjusted tax basis in such ordinary shares. Such gain or loss generally will be a capital gain or loss and will be long-term capital gain or loss (taxable at a reduced rate for individuals and other non-corporate U.S. Holders) if, on the date of sale or disposition, such ordinary shares were held by such U.S. Holder for more than one year. The deductibility of capital losses is subject to limitations.

Non-U.S. Holders

Distributions

Distributions treated as dividends (see "-U.S. Holders-Distributions" above) paid to a Non-U.S. Holder are treated as income derived from sources within the United States and generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of such dividend, or at a lower rate provided by an applicable income tax treaty.

Even if a Non-U.S. Holder is eligible for a lower treaty rate, U.S. federal withholding tax will be imposed at a 30% rate (rather than the lower treaty rate) on dividend payments to a Non-U.S. Holder, unless (i) the Non-U.S. Holder has furnished a valid U.S. Internal Revenue Service (the "IRS") Form W-8BEN or W-8BEN-E or other documentary evidence establishing such holder's entitlement to the lower treaty rate with respect to such payments, and (ii) in the case of actual or constructive dividends paid to a foreign entity, (a) if such entity is, or holds the ordinary shares through, a foreign financial institution, any such foreign financial institution (x) has entered into an agreement with the U.S. government to collect and provide to the U.S. tax authorities information about its accountholders (including certain investors in such institution), (y) satisfies an exemption from the obligation to enter into such an agreement, or (z) satisfies the terms of an applicable intergovernmental agreement, and (b) if required, such entity has provided the withholding agent with a certification identifying its direct and indirect U.S. owners.

If a Non-U.S. Holder is eligible for a reduced rate of U.S. withholding tax pursuant to an applicable income tax treaty, the Non-U.S. Holder may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS.

Sale or Other Disposition

Any gain realized upon the sale or other disposition of ordinary shares by a Non-U.S. Holder generally will not be subject to U.S. federal income tax unless (i) the Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of the disposition, and certain other conditions are met, or (ii) in the case of the sale or disposition of ordinary shares on or after January 1, 2019, the requirements described in item (ii) in the second paragraph under "-Distributions," above, are satisfied. Each Non-U.S. Holder is encouraged to consult with its own tax advisor regarding the possible implications of these withholding requirements on its investment in ordinary shares and the potential for a refund or credit in the case of any withholding tax.

Information Reporting and Backup Withholding

Payments of dividends or of proceeds on the disposition of ordinary shares to U.S. Holders may be subject to information reporting and backup withholding unless the U.S. Holder (i) is a corporation or comes within certain other exempt categories and demonstrates this fact, or (ii) provides a correct taxpayer identification number, certifies as to no loss of exemption from backup withholding and otherwise complies with applicable requirements of the backup withholding rules. Non-U.S. Holders may be required to provide documentary evidence establishing they are not subject to information reporting and backup withholding. Payments of dividends to Non-U.S. Holders and the amount of U.S. federal withholding tax imposed on such dividends must generally be reported annually to the IRS. A similar report will be sent to Non-U.S. Holders. Copies of these reports may be made available to tax authorities in a holder's country of residence.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a holder's U.S. federal income tax liability, provided the required information is furnished to the IRS on a timely basis.

U.S. Federal Estate Tax

Ordinary shares owned or treated as owned by an individual who is not a citizen or resident of the United States (as specifically defined for U.S. federal estate tax purposes) at the time of death will be included in the individual's gross estate for U.S. federal estate tax purposes and may be subject to U.S. federal estate tax unless an applicable estate tax treaty provides otherwise.

Property

Our global corporate headquarters are located in California, US. We occupy approximately 140,000 square feet of solar plant at Building 783, 4741 Urbani Avenue, McClellan, California 95652 (the "Premises"), for office and manufacturing facility, which lease will expire on January 31, 2031. We extended the lease to further rents 56,000 square feet of space adjacent to the Premises which lease will expire on January 31, 2031 concurrently.

We owned approximately 120 acres of farm-land in Arizona, US. We occupy approximately 114 square meters of office space in Athens, the headquarters of the Greek operations, under a monthly lease that expires on June 30, 2023. We occupy approximately 80 square feet of office space in London for operations and business development under a lease which renews every six months.

Our Phoenix Motorcar subsidiary previously operates out of two facilities--the production facility in Ontario, California (a 24,570 sq. ft. facility) and the engineering and service facility in Chino, California (a 12,815 sq. ft. facility) since 2014. In August 2021, we moved to a newly leased facility at 1500 Lakeview Loop, Anaheim, California (the "Anaheim Facility"). The Anaheim Facility is leased by us at a rent of \$0.4 million per year and comprises 39,043 square feet of space consisting of 21,000 square feet of manufacturing floor and 18,043 square feet of office space. Our Anaheim Facility will allow us design, build, and test prototype vehicles and components in-house. The lease on Anaheim Facility expires in March 2027. Our Anaheim Facility will allow us to produce up to 120 units a year, with one manufacturing shift and 240 units a year with two shifts per day.

SPI Solar entered into a long-term lease agreement in April 2021 for nearly 57,988 square feet of combined office and warehouse space at the Preston Tech Center in Livermore, California. The new facility will enable the Company to merge two existing facilities, its Solar 4 America headquarters in Livermore, CA and its regional office/warehouse facility in Livermore, CA, into a single unified space. We rent one office/warehouse facilities with space over 13,175 square feet in CA, US. SolarJuice AU rents one office and two warehouses (35,219 square feet, in total) in Sydney. It uses third-party logistics services, which are not leases, in six locations in Sydney, Melbourne, Brisbane, Adelaide, Perth and Townsville in Australia.

We opened our first RideZoomers electric scooter retail store and service center in Fremont, California. We occupy approximately 2,000 square feet of office space in Fremont, California under a lease that expires on January 27, 2027

SPI Solar rents approximately 465 acres across two parcels for the development of a utility-scale solar project in Illinois and approximately 473 acres across three parcels for the development of a utility scale solar project in Maryland.

Employees

As of December 31, 2020, 2021 and 2022, we had 78, 419 and 316 employees, respectively. The employees are based in the U.S., the U.K., Italy, Greece, Hong Kong, Australia, and Japan. The following table sets forth the number of our employees for each of our major functions as of December 31, 2022:

Major functions	As of December 31, 2022
Managerial functions	28
Operating functions	268
Others	20
Total	316

None of our employees are represented by a labor union nor are we organized under a collective bargaining agreement. We have never experienced a work stoppage and believe that our relations with our employees are good.

Executive Office

Our principal executive office is located at 4803 Urbani Ave., McClellan Park, CA 95652. Our telephone number at this address is +1 888-575-1940. Our registered office is situated at 4th Floor, Harbour Place, 103 South Church Street, PO Box 10240, George Town, Cayman Islands.

ITEM 1A. Risk Factors

Our business, financial condition and results of operations are subject to various changing business, competitive, economic, political and social conditions worldwide. In addition to the factors discussed elsewhere in this annual report, the following are some of the important factors that could adversely affect our operating results, financial condition and business prospects, and cause our actual results to differ materially from those projected in any forward-looking statements.

Risks Related to Our Company

We have incurred net losses, experienced net cash outflows from operating activities and recorded working capital deficits. If we do not effectively manage our cash and other liquid financial assets and execute our liquidity plan, we may not be able to satisfy repayment requirements on our borrowings.

We suffered net losses of \$44.8 million and \$33.7 million for the years ended December 31, 2021 and 2022, respectively. We also had an accumulated deficit of \$670.8 million and a working capital deficit of \$107.7 million as of December 31, 2022. In addition, we have substantial amounts of debt that became due in 2023. These conditions raise substantial doubt about the Company's ability to continue as a going concern.

Historically, we have financed our operations primarily through cash flows from bank borrowings, financing from issuance of convertible bonds, operating activities and proceeds from private placements and registered offerings. However if we failed to achieve the goal, we may need additional financing to repay debt obligation and execute our business plan, and we may not be able to obtain the necessary additional capital on a timely basis, on acceptable terms, or at all. Without access to sufficient level of capital from operations or through bank borrowings or other sources, we may not be able to execute our growth strategy or pursue additional projects, or may not even be able to satisfy repayment requirements on our borrowings. These uncertainties may create concerns for our creditors, suppliers, customers and other counterparties, and cause them to make it more difficult for us to raise

our financing, conduct our business and meet our debt and other obligations.

Although we have formulated a plan as summarized under Note 2 to our consolidated financial statements appearing elsewhere in this annual report to continue implementing various measures to boost revenue and control the cost and expenses within an acceptable level, and other measures including negotiate with potential buyers for sales of Solar PV projects, obtain equity financing from certain subsidiaries' initial public offering and seek credit facilities, we cannot assure you that we will be able to successfully execute this plan. The amount of liquidity that we need may be greater than we currently anticipate as a result of additional factors and events beyond our control, such as global economic slowdown, potential financial crises globally or in any region where we conduct a significant portion of our business, changes in the regulatory and business environments, including international trade-related sanctions, which may prevent us from operating normally or from effectively competing in the PV industry. All of these and other factors and occurrences may increase our cash requirements and make us unable to satisfy repayment requirements on our borrowings.

We have recognized the fact that additional actions were needed to reposition our operations to minimize our cash outflows. Therefore, we undertook a number of initiatives in order to conserve or generate cash on an incremental basis in 2022. For a detailed discussion of these initiatives and strategies, please see "[Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#) -B. Liquidity and Capital Resources- Capital Resources and Material Known Facts on Liquidity."

However, there is no assurance that these initiatives and strategies will be successfully implemented, or even if successfully implemented, our cash position and our operational efficiency will be improved. In the event that our business initiatives and strategies do not achieve the expected results, our business, financial conditions, results of operations and liquidity position may be materially and adversely affected. Furthermore, we have identified several business related risk factors, such as compliance with laws and regulations, contingent liabilities arising from litigations, suspected related party transactions and unusual transactions, which could cause cash position to further deteriorate.

We are in default on a number of our obligations, which could result in our being forced to cease operations if we are unable to reach satisfactory settlement with applicable counterparties.

We have outstanding convertible bonds of \$35.0 million under a convertible bond agreement ("Convertible Bond Agreement") with certain bond holders, which were defaulted in June 2016 and not repaid through December 31, 2022. We have also defaulted a \$2.1 million convertible loan entered into with Streeterville Capital, LLC as of as of the date of this annual report.

If we are unable to reach satisfactory settlement with applicable counterparties, we could be forced to cease operations.

Our substantial indebtedness could adversely affect our business, financial condition and results of operations.

We require a significant amount of cash to meet our capital requirements and fund our operations, including payments to suppliers for PV modules and components and to banks for project loans. As of December 31, 2022, we had \$10.1 million in outstanding short-term borrowings (and the current portion of long-term borrowings) and \$6.6 million in outstanding long-term borrowings (excluding the current portion).

Our existing debt may have significant consequences on our operations, including:

- reducing the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes as a result of our debt service obligations;
- limiting our ability to obtain additional financing;
- making us more vulnerable to changes in our business, our industry and the general economy;
- potentially increasing the cost of any additional financing; and
- limiting our ability to make future acquisitions.

Any of these factors and other consequences that may result from our substantial indebtedness could have an adverse effect on our business, financial condition and results of operations as well as our ability to meet our payment obligations under our existing debt facilities. Our ability to meet our payment obligations under our existing debt facilities depends on our ability to generate significant cash flow in the future. This, to some extent, is subject to general economic, financial, competitive, legislative and regulatory factors as well as other factors that are beyond our control.

Our management has identified material weaknesses in our internal control over financial reporting and we may not be able to remediate these weaknesses. Additionally, our management may identify material weaknesses in the future that could adversely affect investor confidence, impair the value of our securities and increase our cost of raising capital.

Our management, with the participation of our chief executive officer and chief financial officer, conducted an evaluation of the effectiveness of our Company's internal control over financial reporting as of December 31, 2022 based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013 Framework). Based on this evaluation, we noted the following deficiencies that we believe to be material weaknesses:

- a. Failure to maintain an effective control environment of internal control over financial reporting;
- b. Failure to develop an effective risk assessment process to identify and evaluate at a sufficient level of detail all relevant risks of material misstatement, including business, operational, and fraud risks;
- c. Ineffective monitoring activities to assess the operation of internal control over financial reporting;

- d. Ineffective process-level controls associated with the revenue, purchasing and inventory, treasury, property and equipment, tax, and payroll processes that (a) addressed relevant risks, (b) provided sufficient evidence of performance, and (c) established appropriate segregation of duties, during the financial reporting processes;
- e. Lack of sufficient controls designed and implemented for financial information processing and reporting and lacked resources with requisite skills for the financial reporting under U.S. GAAP; and
- f. Lack of sufficient controls designed and implemented in IT environment and IT general control activities, which mainly associated with areas of logical access security, system change, computer operation and service organization control monitoring activities. Certain process-level automated controls and manual controls that are dependent on the completeness and accuracy of information derived from the affected information technology systems were also ineffective.

As a result of the above material weaknesses, management has concluded that our internal control over financial reporting was ineffective as of December 31, 2022.

To remediate the material weaknesses described above, we plan to continue to establish a comprehensive and effective internal control system with the assistance from third party consulting firm which shall provide relevant professional advisory services to us. We plan to continue to assess our standardized processes to further enhance the effectiveness of our financial review, including the analysis and monitoring of financial information in a consistent and thorough manner. The Company's remediation actions to be taken were highlighted as follows:

- a. Strengthen overview and monitoring from the Company's governance, and set up the Company's internal audit department who reports to the audit committee directly, to ensure enhanced oversight over the Company's financial reporting function;
- b. Engage a professional adviser to review, test and optimize the Company's internal control system, particularly focusing on the material weaknesses identified as above.
- c. Launch and improve the internal control execution plan to supervise and monitor the operational functions;
- d. Establish a formal and systematic risk assessment program and involve upper management to identify and analyze risks.
- e. Provide our accounting team and other relevant personnel with more comprehensive guidelines and training on the policies and controls over financial reporting under U.S. GAAP and SEC rules and requirements
- f. Strengthen the review controls on journal entries and accounting treatments and adjustment by providing our accounting team with more comprehensive guidelines on the policies and controls over financial reporting under U.S. GAAP and SEC rules and requirements.
- g. Enhance management monitoring and review of key processes with more comprehensive guidelines on the policies and controls over financial reporting.
- h. Strengthen the monitoring and evaluation of the independent and competent tax and accounting agencies.
- i. Strengthen the supervision and controls on the IT functions, including the enhancement of logical security and monitor service provider.

Any failure to remedy additional weaknesses or deficiencies in our internal control over financial reporting that may be discovered in the future or to implement new or improved controls, or difficulties encountered in the implementation of such controls, could harm our operating results, cause us to fail to meet our reporting obligations or result in material misstatements in our financial statements. Any such failure could, in turn, affect the future ability of our management to certify that our internal control over financial reporting is effective. Ineffective internal control over financial reporting could also subject us to the scrutiny of the SEC and other regulatory bodies which could cause investors to lose confidence in our reported financial information and subject us to civil or criminal penalties or shareholder litigation, which could have an adverse effect on the trading price of our securities.

In addition, if we identify additional deficiencies in our internal control over financial reporting, the disclosure of that fact, even if quickly remedied, could reduce the market's confidence in our financial statements and harm our share price. Furthermore, additional deficiencies could result in future non-compliance with Section 404 of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley"). Such non-compliance could subject us to a variety of administrative sanctions, including review by the SEC or other regulatory authorities.

We rely substantially on our senior management team and our ability to attract, train and retain qualified personnel for our current and future success.

The industry experience, expertise and contributions of our chairman, Mr. Xiaofeng Peng, is essential to our continuing success. We will continue to rely on our senior management, regional management and other key employees to manage our business operations and implement our growth plans. If they cannot work together effectively or efficiently, our business may be severely disrupted. If one or more of our senior or regional management personnel were unable or unwilling to continue to hold their present positions, we might not be able to recruit, train and retain personnel with comparable qualifications, and our results of operations and financial condition may be materially and adversely affected.

Our qualified and experienced project development teams are critical to our success. We may not be able to continue to attract, train and retain qualified personnel, including executive officers, project development personnel, project management personnel and other key personnel with the necessary experience and expertise. In particular, as we enter into new markets, we face challenges to recruit and retain qualified personnel who are familiar with local regulatory regimes and have adequate experiences in project development and operations. In particular, we have experienced a lack of accounting personnel with an appropriate level of knowledge and experience in U.S. GAAP.

There is substantial competition for qualified personnel in the industries we operate. Our competitors may offer more competitive packages or otherwise attract our personnel. Our costs to retain qualified personnel may also increase in response to competition. If we fail to continue to attract and retain a sufficient number of personnel with suitable managerial, technical or marketing expertise, our business operations could be adversely affected.

and our future growth and expansions may be inhibited.

We have limited insurance coverage.

Our insurance policies cover employee-related accidents and injuries, property damage, machinery breakdowns, fixed assets, facilities and liability deriving from our activities, including environmental liability. We consider our current insurance coverage to be adequate, but we cannot assure you that our insurance will be sufficient or effective under all circumstances and against all hazards or liabilities to which we may be subject. Furthermore, our insurance coverage is subject to deductibles, caps, exclusions and other limitations. A loss for which we are not fully insured could have a material adverse effect on our business, financial condition, results of operations and cash flows. Furthermore, due to rising insurance costs and changes in the insurance markets, we cannot assure you that our insurance coverage will continue to be available at comparable rates or on similar terms, if at all. We may also reduce or cancel our insurance coverage at any time. We may not be able to maintain or obtain insurance of the type and amount we desire at reasonable rates and we may elect to self-insure a portion of our solar project portfolio. Any losses not covered by insurance could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In addition, the insurance industry in many parts of the world is still in an early stage of development. As we continue to expand our global presence, we cannot assure you that we will be able to obtain adequate insurance coverage in each of the new markets we enter. To the extent that our operations are not adequately insured in these markets, our business, financial condition and results of operations may be materially and adversely affected.

Changes to our business strategy provide a limited history on which to base our prospects and anticipated results of operations. Our historical operating results may not serve as an adequate basis to evaluate our future prospects and results of operations.

For the past few years, we have expanded our global project development business under our independent power producer model, or IPP model, or our build-and-transfer model, or BT model, by ramping up our portfolio of solar projects. We entered into EV industry and roofing and solar system installation industry by acquiring Phoenix and certain assets of PDI in 2020 and 2021. This limited operating history may not be a reliable indicator of our future performance.

Given our limited operating history under the current business model, we may not be able to ascertain and allocate the appropriate financial and human resources necessary to grow these new business areas. We may invest considerable capital into growing these businesses but fail to address market or customer demands or otherwise fail to achieve satisfactory financial return. In particular, our results of operations, financial condition and future success depend largely on our ability to continue to identify suitable projects that complement our solar project pipeline through acquisitions and secondary development, as well as our ability to obtain the required regulatory approvals, financing and cost-effective construction services for these acquisitions. We must also sustainably manage and operate the solar projects that we acquire, develop and hold under our IPP model, or successfully identify buyers for solar projects under our BT model. The success of our EV business depends on the development of new drive systems and new vans to attract customers, the supply of EV components and batteries as well as the government policies and incentives. For the roofing and solar system installation, we must compete and obtain contracts from customers, and have the ability to install and connect the roof solar. In addition, in expanding into these business areas, we may be competing against companies that have substantially more experience than we do. If we are unable to achieve growth in these new business areas, our overall growth and financial performance may be inferior to our competitors and our operating results could be adversely impacted.

Period-to-period comparisons of our operating results and our results of operations for any period should not be relied upon as an indication of our performance for any future period. We have incurred net losses since our inception, and, as of December 31, 2022, we had an accumulated deficit of approximately \$670.8 million. We may not be able to achieve or maintain profitability in the near future.

We conduct our business in diverse locations around the world and are subject to economic, regulatory, social and political risks internationally and in the regions where we operate.

We currently conduct our business operations in the U.S., Japan, U.K., Greece, Italy, and Australia, and as of April 14, 2023, we own and operate 17.51 MW of solar projects and have 12.04MW of solar projects under construction across the world. Our business is therefore subject to diverse and constantly changing economic, regulatory, social and political conditions in these markets.

Operating internationally exposes us to a number of risks globally and in each of the markets where we operate, including, without limitation:

- global economic and financial conditions, including the stability of credit markets, foreign currency exchange rates and their fluctuations;
- the supply and prices of other energy products such as oil, coal and natural gas in the relevant markets;
- changes in government regulations, policies, taxes and incentives, particularly those concerning the electric utility industry and the solar industry;
- reconciling heterogeneous, complex or contradictory regulations across different jurisdictions, international trade policies, including trade restrictions, embargoes and local sourcing or service requirements;
- political risks, including risks of expropriation and nationalization of assets, potential losses due to civil unrests, acts of terrorism and war, regional and global political or military tensions, strained or altered foreign relations;

- compliance with diverse and complex local environmental, safety, health, labor and other laws and regulations, which can be onerous and costly, as the magnitude, complexity and continuous amendments to the laws and regulations are difficult to predict and liabilities, costs, obligations and requirements associated with these laws and regulations may be substantial;
- dependence on local governments, utility companies and other entities for electricity, water, telecommunications, transportation and other utilities or infrastructure needs;

- difficulties associated with local operating and market conditions, particularly regarding customs, taxation and labor;
- difficulties for our senior management to effectively supervise local management teams in diverse locations;
- increased difficulty in protecting our intellectual property rights and heightened risk of intellectual property disputes;
- failure of our contractual counter-parties to honor their obligations to us, and potential disputes with regulatory authorities, customers, contractors, suppliers, local residents or communities;
- obtaining fair access and legal remedies or benefits through local judicial or administrative bodies; and
- failure to adapt to effectively to local competitive environments.

If economic recovery is slow in the markets where we operate, our business, financial condition, results of operations and prospects could be materially and adversely affected. Moreover, as we expand into additional markets, we may face unfamiliar regulatory regimes, business practices, governmental policies and industry conditions. As a result, our experience and knowledge of our existing markets may not be applicable to new markets that we enter, requiring significant time and resources to adapt our business to these unfamiliar markets. To the extent that our diverse business operations are affected by unexpected and adverse economic, regulatory, social and political conditions, we may experience business disruptions, loss of assets and personnel and other indirect losses and our business, financial condition and results of operations both locally and internationally could be materially and adversely affected.

Risks Related to Our Solar Projects Business

The reduction, modification, delay or discontinuation of government subsidies and other economic incentives for the solar industry may reduce the profitability or viability of our solar projects and materially adversely affect our business.

At present, solar power is not cost competitive with other energy sources in our existing markets and the new markets we plan to expand into. For a variety of technological and economic reasons, the cost of generating electricity from solar energy in these markets currently exceeds and, absent significant changes in technological or economic circumstances, will continue to exceed the cost of generating electricity from conventional and certain other competing energy sources. Therefore, government subsidies and incentives, primarily in the form of feed-in tariffs, or FIT, price support schemes, tax credits, net metering and other incentives to end users, distributors, system integrators and manufacturers of solar products are generally required to enable companies such as us to successfully operate in these markets.

Government subsidies and incentives vary by geographic market. The availability and size of such subsidies and incentives depend, to a large extent, on political and policy developments relating to environmental concerns and other macro-economic factors. These government subsidies and incentives are expected to gradually decrease in scope or be discontinued as solar power technology improves and becomes more affordable relative to other types of energy. Reductions have occurred in certain countries where we have operations, and subsidies and incentives may be further reduced or discontinued in countries where we currently or intend to operate. Reductions may apply retroactively to existing solar projects, which could significantly reduce the value of our existing solar projects and other businesses. Even if reductions in government subsidies and economic incentives apply only to future solar projects, our operations in that country could be materially and adversely affected as we would not be able to leverage our existing presence to drive further growth. Moreover, certain solar subsidies and incentives are designed to expire or decline over time, are limited in total funding, require renewal from regulatory authorities or impose certain investment or performance criteria on our business partners or us, which we may not be able to satisfy. In addition, we may not be able to upgrade our technologies rapidly enough to compensate for foreseeable reductions in government subsidies and incentives. As a result, a significant reduction in the scope or discontinuation of government incentive programs in our existing and target markets could have a material adverse effect on our business, financial condition, results of operations and prospects.

The significant period of time between our upfront investments in solar projects and their commencement of revenue generation could materially and adversely affect our liquidity, business and results of operations.

There is a significant gap between the time that we make significant upfront investments in the solar projects and the time that we receive any revenue from the electricity generated by these solar projects after grid connection (under our IPP model) or from the sale of these projects (under our BT model). These upfront investments include, among others, legal, accounting and other professional fees, costs associated with feasibility studies and due diligence, payments for land use rights, construction costs, government permits and deposits for grid connection agreements and PPAs, none of which may be refundable if a project fails to achieve completion. We have historically relied on private placements, bank loans and financial leases to cover costs and expenses incurred during project development.

In particular, there could be an especially long gap between the initial assessment of a project, the first steps of acquiring land use rights and negotiating interconnection agreements and the obtaining of governmental approvals for construction. Acquisition of land use rights can be particularly time-consuming if we are engaged in primary development and need to negotiate with land owners or government entities. The significant development time increases the risk for adverse events during such process, whether they be economic, environmental, political, social or otherwise, that could cause further delays in project development or increase the overall development costs. Due to such adverse developments or unanticipated delays, we may be unable to recoup our initial investment in the solar projects, which may materially and adversely affect our liquidity, profitability and results of operations.

In addition, we will need to hire and train additional project development personnel to manage our growing portfolio of IPP and BT projects. If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities, execute our business strategies successfully or respond to competitive pressures. As a result, our business, prospects, financial condition and results of operations could be materially and adversely affected.

The market for solar project development is highly competitive.

There is currently intense competition in the solar industry, particularly in the downstream project development segment. Solar projects encounter competition from utilities, industrial companies and other independent power producers. In recent years, there has been increasing competition for the award of PPAs, which has in some markets resulted in an excess supply above designated reserve margins and has been contributing to the

declining electricity prices in many markets. In light of these conditions, we may not be able to obtain PPAs for our new solar projects under our IPP model, and we may not be able to renew PPAs on the same terms and conditions upon expiration, particularly in terms of securing an electricity sale price that enables profitable operation or the sale of a project at anticipated value, if at all.

We have expanded our business to include global project development and may not have the same level of expertise and customer base as our competitors, which may affect our ability to successfully establish our presence in the global market. Our current or potential competitors may have greater operational, financial, technical, market share, scale, management or other resources than us in our existing or target markets. Our competitors may also enter into strategic alliances with other competitors to our detriment, or may ally with our suppliers or contractors, thereby limiting our procurement choices and our flexibility in project development. Our current or potential competitors may offer PV solutions comparable or superior to ours at the same or lower prices, or adapt more quickly to industry trends than we do. Increased competition may result in price reductions, reduced profit margins and loss of market share.

We may not be able to obtain long-term contracts for the sale of electricity generated by our solar projects under our IPP model at prices and on other terms favorable to attract financing and other investments.

Obtaining long-term contracts for the sale of electricity generated by our solar projects under our IPP model at prices and on other terms favorable to us will be essential for obtaining financing or completing construction of these projects. We must compete for PPAs against other developers of solar and renewable energy projects. Furthermore, other sources of power, such as natural gas-fired power plants, have historically been cheaper than the cost of solar power and power from certain types of projects, such as natural gas-fired power plants, can be delivered on a firm basis. The availability of PPAs is subject to a number of economic, regulatory, tax and public policy factors. The inability to compete successfully against other power producers or otherwise enter into PPAs favorable to us would negatively affect our ability to develop and finance our projects and negatively impact our revenue.

Our solar projects have short operating histories and may not perform up to our expectations.

The projects in our solar project portfolio are relatively new with expected operating life of more than 20 years. The majority of our projects in operation as of December 31, 2022 commenced operations since 2014. In addition, the projects we acquire in the future may not have commenced construction or operation or otherwise have a limited operating history. As a result, our assumptions and estimates regarding the future performance of these projects are, and will be, made without the benefit of a meaningful operating history, which may impair our ability to accurately assess the potential profitability of the projects. The performance of these projects will also be subject to risks inherent in newly constructed renewable energy projects, including breakdowns and outages, latent defects, equipment that performs below our expectations and system failures. Failure of some or all of our projects to perform up to our expectations could have a material adverse effect on our business, financial condition and results of operations.

Our results of operations may be subject to fluctuations.

Before we achieve economies of scale in terms of our IPP projects and receive steady electricity generation income, our revenue in a given period will depend on the number of solar projects sold under our BT model and sale of PV modules and solar component, and therefore is subject to significant fluctuations. For instance, we may generate a significant portion of our revenues from the one-time sale of solar projects for certain periods. Moreover, certain aspects of our operations will also be subject to seasonal variations. For example, we may schedule significant construction activities to connect solar projects to the grids prior to a scheduled decrease in FIT rates in order to qualify for more favorable FIT policies.

We may be subject to unforeseen costs, liabilities or obligations when providing O&M services.

We provide ongoing O&M services to third-party solar projects under fixed-price long-term service agreements, pursuant to which we generally perform all scheduled and unscheduled maintenance and operating and other asset management services for the system. Our costs to perform these services are estimated at the time of entering into the O&M agreement for a particular project, and these are reflected in the fixed-price that we charge our customers under the O&M agreement. Should miscalculations in estimating these costs occur (including those due to unexpected increases in inflation or labor costs), our O&M services may not be profitable and our growth strategy and results of operations could be adversely affected. Because of the long-term nature of these O&M agreements, the adverse impacts on results of operations could be significant, particularly if our liabilities are not capped or subject to an above-market liability cap under the terms of the O&M agreement. In addition, we may be subject to substantial costs, liabilities or obligations in the event that the solar projects we maintain and operate do not meet any agreed-upon system-level availability or performance warranties.

Warranties provided by our suppliers and contractors may be limited or insufficient to compensate for our losses, or may not cover the nature of our losses incurred.

We expect to benefit from various warranties, including product quality and performance warranties, provided by our suppliers and contractors. These suppliers and contractors, however, may file for bankruptcy, cease operations or otherwise become unable or unwilling to fulfill their warranty obligations. Even if a supplier fulfills its warranty obligations, the warranty may not be sufficient to compensate us for all of our losses. In addition, the warranty for inverters and transformers generally expire after 5 to 10 years from the date such equipment is delivered or commissioned and is subject to liability limits. Where damages are caused by defective products provided by our suppliers or construction services delivered by our contractors, our suppliers or contractors may be unable or unwilling to perform their warranty obligations as a result of their financial conditions or otherwise. Or if the warranty has expired or a liability limit has been reached, there may be a reduction or loss of warranty protection for the affected projects, which could have a material adverse effect on our business, financial condition and results of operations.

Solar energy generation depends heavily on suitable meteorological conditions. If weather conditions are unfavorable, our power generation output, and therefore the revenue from our solar projects, may be substantially below our expectations.

The electricity produced and revenues generated by solar projects are highly dependent on suitable solar conditions and associated weather conditions. Such conditions are beyond our control. Furthermore, components of these generation systems, including solar panels and inverters, can be damaged by severe weather, such as heavy snowstorms, hailstorms, ice storms, lightning strikes, extreme winds, earthquakes or tornadoes. Replacement and spare parts for key components may be difficult, costly or unavailable. Unfavorable weather and atmospheric conditions could reduce the electricity output of our solar projects to below projected generation, damage or impair the effectiveness of our projects or require shutdown of key equipment, impeding operation of our projects and our ability to achieve forecasted revenues and cash flows.

The amount of electricity solar projects produce is dependent in part on the amount of sunlight, or insolation, where the projects are located. Because shorter daylight hours in winter months results in less insolation, the generation of particular projects will vary depending on the season.

We base our investment decisions with respect to solar power generation assets on the findings of related solar studies conducted prior to construction or based on historical conditions at existing projects. However, actual climatic conditions at an asset site may not conform to the findings of these studies. For example, unexpected development of climate conditions that was not taken into consideration during the investment decision-making process, such as smog and sand storms may significantly reduce the solar power generation. Therefore, our solar projects may not meet anticipated production levels or the rated capacity of our projects, which could adversely affect our business, financial condition, results of operations and cash flows.

The operation of solar projects involves significant inherent risks and hazards that could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The operation of solar projects involves numerous hazardous activities, including delivering electricity to transmission and distribution systems. We are subject to natural disasters such as earthquakes, floods, snow obscuration, high temperatures, lightning, hurricanes, long-term climate changes, volcanoes and wind risks, as well as other inherent risks affecting resource availability such as fire, explosion, soil and ice buildup, structural collapse and equipment failure. Moreover, we may suffer from negligent acts by our PPA counterparties or other third parties. Our rooftop projects could cause damage to the building roof, resulting in claims due to water damages or replacement of roofing materials. These and other hazards can cause significant personal injury or loss of life, severe damage to, and destruction of, property and equipment and contamination of, or damage to, the environment, wildlife takes or fatalities and suspension of operations. The occurrence of any of these events may result in lawsuits against us asserting claims for substantial damages, including for environmental cleanup costs, personal injury and property damage and fines and/or penalties.

In addition, the ongoing operation of solar projects face risks that include the breakdown or failure of equipment or processes or performance below expected levels of output or efficiency due to wear and tear, latent defect, design error or operator error or force majeure events, among others. Unplanned outages, including extensions of scheduled outages, occur from time to time and are an inherent risk of our business. Unplanned outages typically increase our operation and maintenance expenses and may reduce our revenues as a result of generating and selling less electricity.

If we fail to properly operate and maintain our solar projects, these projects may experience decreased performance, shortened operating life or shut downs. Our solar projects may also require periodic upgrading and improvement. Changes in our own operation or local conditions may increase the costs of operating the project, including costs related to labor, equipment, insurance and taxes. If we cause damage to third parties, we may become liable for the consequences of any resulting damage. We may also experience equipment malfunction or failure, leading to unexpected maintenance needs, unplanned outages or other operational issues. In addition, inconsistencies in the quality of solar panels, PV modules, balance-of-system components or maintenance services for our solar projects may affect the system efficiency of our projects.

Any unexpected operational or mechanical failure, including failure associated with breakdowns and forced outages, and any decreased operational or management performance, could reduce our solar projects' power generating capacity below expected levels, reducing our revenues and profitability. Degradation of the performance of our solar projects above levels provided for in the relevant PPAs may also reduce our revenues. Unanticipated capital expenditures associated with maintaining, upgrading or repairing our projects may also reduce our profitability. In addition, damage to our reputation due to system failure or accidents could negatively impact our relationships with customers and local government authorities, which could also materially adversely affect our business. Negative public or community response to solar energy projects could adversely affect the approval for and construction of our projects. We maintain insurance coverage that we consider adequate but we cannot assure you that our insurance will be sufficient or effective under all circumstances and against all hazards or liabilities to which we may be subject.

We may encounter unexpected difficulties when developing solar power projects.

The development of solar projects involves numerous risks and uncertainties and require extensive research, planning and due diligence. Before we can determine whether a solar project is economically, technologically or otherwise feasible, we may be required to incur significant capital expenditure for land and interconnection rights, preliminary engineering, permitting, legal and other work. Success in developing a particular solar project is contingent upon, among others:

- securing the rights to suitable project locations with access to the grid, necessary rights of way, and satisfactory land use permissions;
- rezoning land, as necessary, to support a solar project;
- negotiating and receiving on schedule the required permits and approvals for project development from government authorities;
- completing all required regulatory and administrative procedures needed to obtain permits and agreements;
- obtaining rights to interconnect the solar project to the grid or to transmit energy;
- paying interconnection and other deposits, some of which are non-refundable;
- negotiating favorable payment terms with module and other equipment suppliers and contractors;
- signing PPAs or other off-take arrangements that are commercially acceptable and adequate for providing financing;
- obtaining construction financing, including debt financing and equity contributions, as appropriate; and
- satisfactorily completing construction on schedule.

Successful completion of a particular solar project may be adversely affected by numerous factors, including, without limitation:

- unanticipated delays or changes in project plans;
- changes to laws and regulations requiring additional permits, licenses and approvals, or difficulties in obtaining and maintaining existing governmental permits, licenses and approvals;
- the inability to obtain adequate financing with acceptable terms;

- unforeseeable engineering problems, construction or other unexpected delays and contractor performance issues;
- delays, disruptions or shortages of the supply of labor, equipment and materials, including work stoppages;
- defective PV module or other components sourced from our suppliers;
- adverse weather, environmental and geological conditions, force majeure and other events out of our control; and
- cost overruns due to any one or more of the foregoing factors.

Accordingly, some of the solar projects in our portfolio may not eventually commence operation and connect to the grid, or even proceed to construction. If a number of our solar projects are not completed, our business, financial condition and results of operations could be materially and adversely affected.

We rely on third-party suppliers and contractors when developing our solar power projects.

We source PV modules and other balance-of-system components from a wide selection of third-party suppliers and engage third-party contractors for the construction of solar projects. We typically enter into contracts with our suppliers and contractors on a project-by-project basis and do not maintain long-term contracts with our suppliers or contractors. Therefore, we are generally exposed to price fluctuations and availability of PV modules and balance-of-system components sourced from our suppliers and construction services procured from our contractors. For example, in light of changing market dynamics and government policies, the price and availability of PV modules have been subject to significant volatility in recent years. Increases in the prices of PV modules or balance-of-system components, decreases in their availability, fluctuations in construction, labor and installation costs, or changes in the terms of our relationship with our suppliers and contractors may increase the cost of procuring equipment and engaging contractors and hence materially adversely affect our financial condition and results of operations.

Furthermore, the delivery of defective products or products or construction services by our suppliers or contractors which are otherwise not in compliance with contract specifications, or the late supply of products or construction services, may cause construction delays or solar power projects that fail to adhere to our quality and safety standards, which could have a material adverse effect on our business, results of operations, financial condition and cash flow.

Our construction activities may be subject to cost overruns or delays.

We engage third-party contractors for the construction of solar projects. Construction of solar projects involves numerous risks and uncertainties, and may be adversely affected by circumstances outside of our control, including seasonal changes, inclement weather, failure to receive regulatory approvals on schedule or third-party delays in supplying PV modules or other materials. We may not be able to negotiate satisfactory construction agreements with third-party contractors, or our third-party contractors may not be able to contract with their subcontractors on a timely basis. In addition, if our contractors fail to adhere to our quality standards or otherwise fail to meet their contractual obligations, or if there is a shortage of contractors or labor strikes that prevents our contractors from completing their construction work on schedule or within budget, the solar projects may experience significant delays or cost overruns. Increases in the prices of solar products and components may also increase our procurement costs. Labor shortages, work stoppages and labor disputes could significantly delay a project or otherwise increase our costs. In addition, delays in obtaining or failure to obtain required construction permits could also delay or hinder the construction of our solar projects. A lack of proper construction permits, or post-construction approvals could delay or prevent our solar projects from commencing operation and connecting to the grid.

We may not be able to recover any of our losses resulting from construction cost overruns or delays. In addition, since the FIT applicable to a solar project generally depends on its lead time to grid connection, construction and connection delays may lead to a lower-than-expected FIT, which would adversely affect the long-term value and potentially the viability of the project. Many PPAs also require our solar projects to connect to the grid by a certain date. If the construction of solar project is significantly delayed, we may be in violation of our PPAs or may only be entitled to reduced FIT payments, if at all. A reduction or forfeiture of FIT payments would materially and adversely affect the profitability for a solar power project. Any of the above contingencies could lead to our failure to generate expected return from our solar projects and result in unanticipated and significant revenue and earnings losses.

The solar industry faces competition from both conventional power industries and other renewable power industries.

The solar industry faces intense competition from all other players within the energy industry, including both conventional energy providers such as nuclear, natural gas and fossil fuels and other renewable energy providers, such as geothermal, hydropower, biomass, wind and nuclear energy. Other energy sources may benefit from innovations that reduce their costs and increase safety, and therefore improve their competitiveness. New natural resources may be discovered, or global economic, business or political developments may disproportionately benefit conventional energy sources or other renewable energy sources at the expense of solar. Governments may strengthen their support for other renewable energy sources and reduce their support for the solar industry. Changes in supply and demand of conventional energy sources or other energy sources may reduce the cost of such sources and render solar power less attractive. The decline in oil prices would adversely impacted the competitiveness of solar energy. Failure for our customers, other business partners or us to compete with the providers of other energy sources may materially and adversely affect our business, results of operations and financial condition.

We may not be able to acquire additional solar projects to grow our project portfolio or effectively integrate or realize the anticipated benefits of our acquisitions.

Our current business strategy includes plans to further increase the number of solar projects we own and operate. We have significantly expanded our operations through acquisitions of solar projects across different development stages in Japan, the U.S., the U.K., Greece and Italy, and we may acquire additional businesses, products or technologies or enter into joint ventures or other strategic initiatives in the future. Accordingly, our ability to execute our expansion strategies depends on our ability to identify suitable investment or acquisition opportunities, which is subject to numerous uncertainties. We may not be able to identify favorable geographical markets for expansion or assess local demand for solar power, identify a sufficient number of projects as contemplated, or secure project financing and refinancing on reasonable terms for the contemplated acquisitions. In addition, our

competitors may have substantially greater capital and other resources than we do, and may be able to pay more for the acquisition targets we identify and may be able to identify, evaluate, bid for and acquire a greater number of projects than our resources permit.

Furthermore, we may not realize the anticipated benefits of our acquisitions and each transaction involves numerous risks, including, among others:

- difficulty in assimilating the operations and personnel of the acquired business;
- difficulty in effectively integrating the acquired assets, technologies or products with our operations;
- difficulty in maintaining controls, procedures and policies during the transition and integration;
- disruption of our ongoing business and distraction of our management from daily operations;
- inability to retain key technical and managerial personnel and key customers, suppliers and other business partners of the acquired business;
- inability to achieve the financial and strategic goals for the acquired and combined businesses as a result of insufficient capital resources or otherwise;

- incurring acquisition-related costs or amortization costs for acquired intangible assets that could impact our operating results;
- potential failure of the due diligence processes to identify significant issues with product quality, legal and financial liabilities, among others;
- potential failure to comply with local regulatory requirements or to obtain construction, environmental and other permits and approvals from governmental authorities in a timely manner or at all, which could delay or prevent such acquisitions; and
- potential failure to connect the acquired solar projects to the local grid on schedule and within budget, to ensure sufficient grid capacity for the life of the solar projects, or to collect FIT payments and other economic incentives as expected from local government authorities.

Acquisitions of companies are inherently risky, and ultimately, if we do not generate expected economic returns from the acquired businesses, or become responsible for any preexisting liabilities related to the acquired businesses, we may not fully realize the anticipated benefits of the acquisitions, which could adversely affect our business, financial condition or results of operations.

We may fail to comply with laws and regulations in the markets we operate.

The development, construction and operation of solar projects are highly regulated. We conduct our operations in many jurisdictions and are subject to different laws and regulations, including national and local regulations relating to building codes, taxes, safety, environmental protection, utility interconnection, metering and other matters. Our establish subsidiaries also have operations in these countries and jurisdictions that are required to comply with various local laws and regulations. While we strive to work with our local counsel and other advisers to comply with the laws and regulations of each jurisdiction where we operate, there have been, and may continue to be, instances of non-compliances such as late filings of annual accounts with the appropriate governmental authorities, failure to notify governmental authorities of certain transactions, failure to hold annual meetings as required, failure to register director or address changes or other local requirements which may result in fines, sanctions or other penalties against our non-complying subsidiaries and its directors and officers. While we do not believe our past and continuing non-compliances, singularly or in the aggregate, will have a material adverse effect on our business, financial condition or results of operations, we cannot assure you that similar or other non-compliances will not occur in the future which may materially and adversely affect our business, financial condition or results of operations.

We are responsible for obtaining a variety of approvals, permits and licenses from various authorities for our solar projects. The procedures for obtaining such approvals, permits and licenses vary from country to country, making it onerous and costly to adhere to the varying requirements and standards of individual localities. Failure to obtain the required approvals, permits or licenses or to comply with the conditions associated therewith may result in fines, sanctions, suspension, revocation or non-renewal of approvals, permits or licenses, or even criminal liabilities, which could material and adversely affect our business, financial condition and results of operations. In addition, new government regulations pertaining to our business or solar projects may result in significant additional expenses. We cannot assure you that we will be able to promptly and adequately respond to changes of laws and regulations in various jurisdictions, or that our employees and contractors will act in accordance with our internal policies and procedures. Failure to comply with laws and regulations where we develop, own and operate solar projects may materially and adversely affect our business, results of operations and financial condition. The market demand for solar power is strongly influenced by government regulations and policies concerning the electric utility industry as well as by policies promulgated by electric utilities in each of the markets we operate. These regulations and policies often relate to electricity pricing and technical interconnection of electricity generation. Customer purchases of alternative energy sources, including solar power technology, could be deterred by these regulations and policies, which may significantly reduce the demand for our PV solutions. For example, without a regulatory-mandated exception for solar power systems, utility customers are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid or limit the production capacity to the grid. The county-level government may also levy additional tax related to land use or potential plants recovery that was not initially included during the development or construction phase. These fees could increase, rendering solar power less cost competitive in these markets and our PV solutions less desirable.

It is difficult to ensure ongoing compliance with the changing requirements of individual markets. Any new government regulations or utility policies pertaining to solar projects may result in significant additional expenses to us or other industry participants and as a result could cause a significant reduction in demand for our PV solutions.

Environmental, health and safety laws and regulations subject us to extensive and increasingly stringent operational requirements, as well as potentially substantial liabilities arising out of environmental contamination.

We are subject to, in each of the jurisdictions we operate, numerous national and local laws, regulations, guidelines, policies, directives and other requirements governing or relating to, among others, land use and zoning matters and protection of human health and the environment, including those

limiting the discharge and release of pollutants into the environment, and the protection of certain wildlife. These laws and regulations require our solar projects to, among others, obtain and maintain approvals and permits, undergo environmental impact assessments and review processes and implement environmental, health and safety programs and procedures to control risks associated with the construction, operation and decommissioning of solar projects. If our solar projects do not comply with applicable environmental laws, regulations or permit requirements, we may be required to pay significant fines or penalties or suspend or cease operations of the affected projects. Violations of environmental and other laws, regulations and permit requirements may also result in criminal sanctions or injunctions.

Our solar projects may experience malfunctions and other unplanned events that result in personal injury and property damage. As such, the operation of our projects carries an inherent risk of environmental, health and safety liabilities (including potential civil actions, compliance or remediation orders, fines and other penalties), and may subject us to administrative and judicial proceedings. In addition, certain environmental laws and regulations may impose joint and several liability on past and present owners and operators of sites, related to the cleaning up of sites where hazardous wastes or materials were disposed or released.

Technological advances in the solar industry could render our PV solutions uncompetitive or obsolete.

The solar industry is characterized by its rapid adoption and application of technological advances. This requires us to develop new PV solutions and enhance our existing PV solutions to keep pace with and respond effectively to evolving technologies, market conditions and customer demands. Our competitors may develop technologies more advanced and cost-effective than ours. We will need to invest substantially in research and development to maintain our market position and effectively compete in the future. Our failure to further refine or enhance our technologies could render our technologies uncompetitive or obsolete, which could reduce our market share and cause our revenues to decline.

In addition, we may invest in and implement newly-developed, less-proven technologies in our project development or in maintaining or enhancing our existing projects. There is no guarantee that these new technologies will perform or generate customer demand as anticipated. The failure of our new technologies to perform as anticipated may materially and adversely affect our business and results of operations.

If demand for solar projects develops more slowly than we anticipate, develops in ways inconsistent with our strategy, or fails to develop at all, our business, financial condition, results of operations and prospects could be materially and adversely affected.

The solar power market worldwide is at a relatively early stage of development compared to conventional power markets and other renewable power markets, such as that for hydropower. Thus, trends in the solar industry are based only on limited data and may be unreliable. Many factors may affect the demand for solar projects worldwide, including:

- the cost and availability of project financing for solar projects;
- fluctuations in economic and market conditions that improve the viability of competing energy sources;
- the cost-effectiveness, performance and reliability of solar projects compared to conventional and other non-solar energy sources;
- the availability of grid capacity allocated to solar power;
- political opposition to solar power due to environmental, land use, safety or other local concerns;
- the availability of government subsidies and incentives to support the development of the solar industry;
- public perceptions of the utility, necessity and importance of solar power and other renewable energies;
- the success of other alternative energy generation technologies, such as fuel cells, wind power and biomass; and
- utility and grid regulations that present unique technical, regulatory and economic barriers to the development, transmission and use of solar energy.

Our analysis and predictions concerning the future growth of the solar industry are based on complex facts and circumstances and may be incorrect. If market demand for solar projects in our existing or target markets fails to develop according to our expectations, our business, financial condition, results of operations and prospects could be materially and adversely affected.

Our growth prospects and future profitability and our ability to continue to acquire solar projects depends on the availability of sufficient financing on terms acceptable to us.

The development of solar projects requires significant upfront cash investments, including the costs of permit development, construction and associated operations. Since 2014, we have been expanding our solar project portfolio primarily by acquiring solar projects across different development stages. Such expansion strategy requires significant upfront capital expenditures which, depending on the respective development stages of the acquired projects, may not be recouped for a significant period of time. As a result, we are required to pursue a wide variety of capital resources to fund our operations, including private placements, bank loans, financial leases and other third-party financing options.

Our ability to obtain sufficient financing is subject to a number of uncertainties, including:

- our future financial condition, results of operations and cash flows;
- the general condition and liquidity of global equity and debt capital markets;
- local regulatory and government support for solar power in markets where we operate, such as through tax credits and FIT schemes;
- the availability of credit lines from banks and other financial institutions;

- economic, political, social and other conditions in the markets where we operate;
- our level of indebtedness and ability to comply with financial covenants under our debt financing; and
- tax and securities laws which may hamper our ability to raise capital.

Due to these or other reasons, we may not be successful in obtaining the required funds for future acquisitions. Furthermore, we may be unable to refinance our bank borrowings on favorable terms, or at all, upon the expiration or termination of our existing loan facilities. In addition, rising interest rates could adversely affect our ability to secure financing on favorable terms. Our failure in securing suitable financing sources in a timely manner or at all, or on commercially acceptable terms, could significantly limit our ability to execute our growth strategies or future acquisitions, and may have a material adverse effect on our business, financial condition, results of operations and cash flows.

Risks Related to Our America Solar Module Manufacturing Business

We face risks associated with the international manufacturing, marketing, distribution and sale of our products and the construction and operation of our US manufacturing facilities, and if we are unable to effectively manage these risks, our business and operations abroad may be adversely affected and our ability to maintain, develop and expand our business in the US may be restricted.

We commenced pilot production of "Made-in-America" solar modules under the Solar4America brand in June 2022. Currently, we sublease existing solar module manufacturing facilities with a total floor area of 195,100 square feet located in McClellan Park, California. We acquired solar module manufacturing equipment assets from Sunergy California LLC, and we have assembled a manufacturing team to commence production. We have entered into purchase and other agreements for purchase of additional manufacturing equipment and expansion of our production capacities, and expected that our production capacity will expand to approximately 650MW solar modules per year by the end of 2022 once all of the solar module assembly equipment is fully assembled and operational. We expect the production capacity will be further increased to 1,100MW per year by the end of 2023. We plan to promote our products from this factory, as "Made-in-America," which we expect to appeal to certain customers and to qualify for government "Buy America" programs.

The manufacturing, marketing, distribution and sale of our products in the US, as well as the construction and operation of our manufacturing facilities in the US may expose us to a number of risks, including those associated with:

- costs associated with understanding local markets and trends;
- costs associated with establishment of US manufacturing facilities;
- marketing and distribution costs;
- customer services and support costs;
- risk management and internal control structures for our US operations;
- compliance with the different commercial, operational, environmental and legal requirements;
- obtaining or maintaining certifications for production, marketing, distribution and sales of our products and services;
- maintaining our reputation as an environmentally friendly enterprise for our products or services;
- obtaining, maintaining or enforcing intellectual property rights;
- changes in prevailing economic conditions and regulatory requirements;
- transportation and freight costs;
- employing and retaining manufacturing, technology, sales and other personnel who can function effectively in US markets;
- trade barriers such as trade remedies, which could increase the prices of the raw materials for our solar products, and export requirements, tariffs, taxes and other restrictions and expenses, which could increase the prices of our products and make us less competitive in some countries;
- challenges due to our unfamiliarity with local laws, regulations and policies, our absence of significant operating experience in local market, increased costs associated with establishment of overseas operations and maintaining a multinational organizational structure; and
- other risks that are beyond our control.

Our management team has no experience in operating a module manufacturing factory in the US, which will be a unique business line in addition to the distribution, installation and product development businesses that we operate. The new CRM/ERP systems that we are implementing in the US may not be suitable for a manufacturing factory. We cannot assure that the management team will be able to operate the manufacturing factory successfully or generate enough profit or cash flow from it to justify the capital investments.

We will face different business environments and industry conditions in the domestic solar module assembly and sale business, and we may spend substantial resources familiarizing ourselves with the new environment and conditions. Our business operations might be affected by unexpected and adverse economic, regulatory, social and political conditions in the jurisdictions in which we have operations, we may experience project disruptions, loss of assets and personnel, and other indirect losses that could adversely affect our business, financial condition and results of operations. Our manufacturing facility in the United States might expose us to various risks, including, among others, failure to obtain the required approvals, permits or licenses, or to comply with the conditions associated therewith, failure to procure economic incentives or financing on satisfactory terms, and failure to procure construction materials, production equipment and qualified personnel for the manufacturing facility in a timely and cost-effective manner. Any of these events may increase the related costs, or impair our ability to run our operations in the future on a cost-effective basis, which could in turn have a material adverse effect on our business and results of operations.

Compliance with environmentally safe production and construction and renewable energy development regulations can be costly, while non-compliance with such regulations might result in adverse publicity and potentially significant monetary damages, fines and suspension of our business operations.

In connection with SJ Technology's solar module assembly business, we are required to comply with all national and local environmental protection regulations for our operations in the United States, and some of our subsidiaries must obtain and maintain pollution discharge permits or registrations, or are in the process of application for such permits and registrations, which are subject to application, renewal or extension on an annual

basis or within a longer period. We cannot assure you that we are or will be able to successfully obtain, renew or extend these permits in a timely manner or at all.

SJ Technology, uses, stores and generates volatile and otherwise dangerous chemicals and wastes during our manufacturing processes, and is subject to a variety of government regulations related to the use, storage and disposal of such hazardous chemicals and waste. We are also required to obtain construction permits before commencing constructing production facilities. Although we will try to take measures to prevent environmental incidents from occurring in the future, we cannot assure you that our operations will not be disrupted by the environmental incidents. We note that the relevant authorities might issue more stringent environmental protection, safety production and construction regulations that might impact our domestic manufacturing facilities, and the costs of compliance with new regulations could be substantial. If we fail to comply with the future environmentally safe production and construction laws and regulations, we might be required to pay fines, suspend construction or production, or cease operations, and any failure by us to properly manage the discharge of dangerous substances could subject us to potentially significant monetary damages and fines or the suspension of our business operations.

Risks Related to Our PV Components Business

Debt and Collections Risks:

We may have to secure payments for certain consumer solar or battery sales but there is no assurance that such payments will be timely collected. We have also enhanced our collection efforts and undertaken various measures to collect outstanding payments from customers and may suffer damages as a result of legal actions and other payments due to us.

We currently conduct our business operations in Australia. We are in approximately 9 locations in Australia including offices/warehouse and storage facilities. Our business is therefore subject to diverse and constantly changing economic, regulatory, social and political conditions in these areas including the following:

- local, national and international economic and financial conditions, including the stability of credit markets, foreign currency exchange rates and their fluctuations;
- the supply and prices of construction materials and other energy products such as oil, coal and natural gas in their relevant markets;
- changes in government regulations, policies, taxes and incentives, particularly those concerning the electric utility industry, the solar industry and the construction industry;
- reconciling heterogeneous, complex or contradictory regulations across different jurisdictions, international trade policies, including trade restrictions, embargoes and local sourcing or service requirements;
- political risks, including risks of expropriation and nationalization of assets, potential losses due to civil unrests, acts of terrorism and war, regional and global political or military tensions, strained or altered foreign relations;
- compliance with diverse and complex local environmental, safety, health, labor and other laws and regulations, which can be onerous and costly, as the magnitude, complexity and continuous amendments to the laws and regulations are difficult to predict and liabilities, costs, obligations and requirements associated with these laws and regulations may be substantial;
- dependence on local governments, utility companies and other entities for electricity, water, telecommunications, transportation and other utilities or infrastructure needs;

- difficulties associated with local operating and market conditions, particularly regarding customs, taxation and workforce labor;
- difficulties for our senior management to effectively supervise local management and installation teams in diverse locations;
- increased difficulty in protecting our intellectual and privacy property rights and heightened risk of intellectual property disputes;
- failure of our contractual counter-parties to honor their obligations to us, and potential disputes with regulatory authorities, customers, contractors, suppliers, local residents or communities;
- obtaining fair access and legal remedies or benefits through local judicial or administrative bodies; and
- failure to adapt to effectively to local competitive environments.

Our sales may be subject to risks associated with construction, delays and other contingencies, which could have a material adverse effect on our reputation, business and the results of operations.

Historically, we have generated a significant portion of our revenue from sales of PV products. We generally enter into a sales contract under which we act as the supplier in connection with the supply of solar and battery systems. In addition, delays in supply of PV module or components, construction delays, pandemic delays, labor, unexpected performance problems in electricity generation or other events may cause us unanticipated and severe revenue and earnings losses and financial penalties.

We rely on suppliers when selling our solar and battery products and may see delays and/or cancellations.

We source PV modules and other balance-of-system components from a wide selection of third-party suppliers. Therefore, we are generally exposed to price fluctuations and availability of PV modules and balance-of-system components sourced from our suppliers. For example, in light of changing market dynamics and government policies, the price and availability of PV modules and other solar materials have been subject to significant volatility in recent years. Increases in the prices of PV modules or balance-of-system components, decreases in their availability, fluctuations in construction, labor and installation costs, or changes in the terms of our relationship with our third party installers and suppliers may increase the cost of procuring equipment and hence materially adversely affect our financial condition and results of operations.

Warranties provided by our third party installers and contractors may be limited or insufficient to compensate for our losses, or may not cover the nature of our losses incurred.

We expect to benefit from various warranties, including product quality and performance warranties, provided by our installers and contractors. These suppliers and contractors, however, may file for bankruptcy, cease operations or otherwise become unable or unwilling to fulfill their warranty obligations. Even if a supplier fulfills its warranty obligations, the warranty may not be sufficient to compensate us for all of our losses. In addition, the warranty for inverters and transformers may expire after such equipment is delivered or commissioned and/or is subject to liability limits. Where damages are caused by defective products provided by our suppliers or construction services delivered by our contractors, our suppliers or contractors may be unable or unwilling to perform their warranty obligations as a result of their financial conditions or otherwise. Or if the warranty has expired or a liability limit has been reached, there may be a reduction or loss of warranty protection for the affected projects, which could have a material adverse effect on our business, financial condition and results of operations.

We may be subject to product or strict liability claims if the provision of our services or the solar projects we sell result in injury or damage, and we have limited insurance coverage to protect against such claims, as well as losses that may result from business interruptions or natural disasters.

Solar projects are highly sophisticated and generate and transfer large volumes of electric charge with the potential to harm or kill, whether by improper installation or other causes. We are therefore exposed to an inherent risk of product liability claims or class action suits in the event that the installation of the solar power systems during the provision of our services, or the solar projects we sell under our business model, results in injury or damage, and we may even be liable in some jurisdictions under a strict liability theory, where liability holds even if we are not negligent or at fault. Moreover, to the extent that a claim is brought against us, we may not have adequate resources to defend ourselves. We rely on our general liability insurance to cover product liability and other liability claims and have not separately obtained product liability insurance. The unfavorable settlement of product or strict liability claims against us could result in significant monetary damages and significant payments in excess of our insurance coverage could have a materially adverse effect on our financial results. Any such business disruption could result in substantial costs and diversion of resources.

Risks Related to Our Residential Roofing and Solar Installation Business

The solar energy industry is a new and evolving market, which may not grow to the size or at the rate we expect.

The solar energy industry is a new and rapidly growing market opportunity. We believe the solar energy industry will continue to take several years to fully develop and mature, but we cannot be certain that the market will grow to the size or at the rate that we expect. Any future growth of the solar energy market and the success of our solar service offerings depend on many factors beyond our control, including recognition and acceptance of the solar service market by consumers, the pricing of alternative sources of energy, a favorable regulatory environment, the continuation of expected tax benefits and other incentives, and our ability to provide our solar service offerings cost-effectively, and our business might be adversely affected should the markets for solar energy do not develop to the size or at the rate we expect.

Solar energy has yet to achieve broad market acceptance and depends in part on continued support in the form of rebates, tax credits, and other incentives from federal, state and local governments. If this support diminishes materially, our ability to attract customers for our products and services could be adversely affected. Growth in residential solar energy also depends on dynamic macroeconomic conditions, retail prices of electricity and customer preferences. Declining macroeconomic conditions, including labor markets and residential real estate markets, could contribute to instability and uncertainty among customers and impact their financial ability, credit scores or interest in entering into long-term contracts, even if such contracts would generate immediate and long-term savings.

Market prices of retail electricity generated by utilities or other energy sources also could decline for a variety of reasons, as discussed further below. Any such declines in macroeconomic conditions, changes in retail prices of electricity or changes in customer preferences would adversely impact our business.

We have historically benefited from declining costs in our industry, and our business and financial results might be harmed not only as a result of any increases in costs associated with our solar service offerings, but, also, by any failure of these costs to continue to decline as we currently expect. If we do not reduce our cost structure in the future, we may not achieve profitability.

Declining costs related to raw materials, manufacturing and the sale and installation of our solar service offerings have been a key driver in the pricing of our solar service offerings and customer adoption of solar energy. The prices of solar modules and raw materials have declined, however the cost of solar modules and raw materials could increase in the future, and such products' availability could decrease, due to a variety of factors, including restrictions stemming from the COVID-19 pandemic, tariffs and trade barriers, export regulations, regulatory or contractual limitations, industry market requirements, and changes in technology and industry standards.

Other factors may also impact costs, such as our choice to make significant investments to drive growth in the future.

Competition and Price Cutting

The roofing industry is very competitive based on the large number of contractors, and there is intense competition over the pricing of roof repairs and installations, and our business might suffer if our competitors reduce their prices to where we can no longer profitably operate.

We might lose business to competitors that underbid us and might be unable to compete favorably in our highly competitive industry.

Most of our project awards are determined through a competitive bidding process in which price is the determining factor, and we compete against multiple competitors in many of the markets in which we operate. Some of our competitors are larger than we are and are vertically integrated, and competitors larger than us may be able to better exploit economies of scale to receive higher discounts or rebates when purchasing materials. An increase in competition may result in decreases in new project awards to us at acceptable profit margins, and a downturn in private residential and commercial construction could materially and adversely impact our financial condition, results of operations or liquidity.

Our business is seasonal and subject to adverse weather conditions, which can adversely impact our business.

Some of our construction operations occur outdoors in areas in which hurricanes, tornadoes, tropical storms, and/or wild fires are common. Seasonal changes and adverse weather conditions, such as extended snowy, rainy or cold weather, can adversely affect our business operations

through delays in our construction schedules, and reduced efficiencies in our contracting operations, resulting in under-utilization of crews and equipment and lower contract profitability. Climate change may lead to increased extreme weather and changes in precipitation and temperature, including natural disasters. Should the impact of climate change be significant or occur for lengthy periods of time, our financial condition or results of operations would be adversely affected.

The reduction, modification, delay or discontinuation of government subsidies and other economic incentives for the solar industry might reduce the profitability or viability of our solar projects and materially adversely affect our business.

Solar energy is not currently cost competitive with other energy sources in our existing markets and the new markets into which we plan to expand. For a variety of technological and economic reasons, the cost of generating electricity from solar energy in these markets currently exceeds and, absent significant changes in technological or economic circumstances, will continue to exceed the cost of generating electricity from conventional and certain other competing energy sources. Government subsidies and incentives, primarily in the form of tax credits, net metering, and other incentives to end users and distributors of solar products are generally required to enable companies such as us to successfully operate in these markets.

Government subsidies and incentives vary by geographic market. The availability and size of such subsidies and incentives depend, to a large extent, on political and policy developments relating to environmental concerns, and other macro-economic factors. These government subsidies and incentives are expected to gradually decrease in scope or be discontinued as solar energy technology improves and becomes more affordable relative to other types of energy. Reductions have occurred in certain areas where we have operations, and subsidies and incentives may be further reduced or discontinued in areas where we currently or intend to operate. A significant reduction in the scope or discontinuation of government incentive programs in our existing and target markets could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Existing rules, regulations and policies pertaining to electricity pricing and technical interconnection of customer-owned electricity generation and changes to these regulations and policies might deter the purchase and use of solar energy systems and negatively impact development of the solar energy industry.

The market for solar energy systems is heavily influenced by foreign, federal, state and local government regulations and policies concerning the electric utility industry, as well as policies adopted by electric utilities. These regulations and policies often relate to electricity pricing and technical interconnection of customer-owned electricity generation. For example, the vast majority of states have a regulatory policy known as net energy metering, or "net metering", which allows our customers to interconnect their on-site solar energy systems to the utility grid and offset their utility electricity purchases by receiving a bill credit at the utility's retail rate for energy generated by their solar energy system that is exported to the grid and not consumed on-site. The customer consequently pays for the net energy used or receives a credit at the retail rate if more electricity is produced than consumed. Net metering, in some states, is being replaced with lower credits for the excess electricity sent onto the grid from solar energy systems, and utilities are imposing minimum or fixed monthly charges on owners of solar energy systems. These regulations and policies have been modified in the past and may be modified in the future in ways that can restrict the interconnection of solar energy systems and deter purchases of solar energy systems by customers. Electricity generated by solar energy systems also competes most favorably in markets with tiered rate structures or peak hour pricing that increase the price of electricity when more is consumed. Modifications to these rate structures by utilities, such as reducing peak hour or tiered pricing or adopting flat rate pricing, could require the price of solar energy systems to be reduced in order to compete with the price of utility generated electricity.

Large California utilities have, for instance, started transitioning customers to time-of-use rates and also have adopted a shift in the peak period for time-of-use rates to later in the day. Unless grandfathered under a different rate, residential customers with solar energy systems are required to take service under time-of-use rates with the later peak period. Moving utility customers to time-of-use rates or the shift in the timing of peak rates for utility-generated electricity to include times of day when solar energy generation is less efficient or non-operable could also make our offerings less competitive. Time-of-use rates could also result in higher costs for our customers whose electricity requirements are not fully met by our offerings during peak periods. The price of electricity from utilities also may grow less quickly than the escalator feature in certain of our solar service agreements, which could also make our systems less competitive with the price of electricity from the electrical grid and result in a material adverse effect on our business, financial condition and results of operations.

An increase in our cost of materials could arise as a result of US trade restrictions or tariffs on imported solar modules, cells, inverters, batteries or other products related to our business.

The US and China in 2018 began a new round of mutual tariffs on various products imported from each other's country. The initial US tariffs on products from China include an additional 25% tariff on solar modules and cells made in China, as well as a 25% tariff on inverters, batteries and electrical equipment made in China beginning in January 2019. The US has also imposed or announced tariffs on products imported from other countries that might provide products that we use. President Biden announced in a May 10, 2022 speech that he would consider ending tariffs on certain goods produced in China to help reduce the prices of domestic goods, and his US Trade Representative earlier that month initiated a procedural review of US tariffs on goods made in China leading up to the four-year anniversary of the Trump Administration's passage of July and August 2018 tariffs on certain goods made in China. We cannot predict future tariffs or trade laws between the US and other countries, which products might be subject to tariffs or other actions, or retaliatory actions against the US by such other countries. The adoption and expansion of trade restrictions, the occurrence of a trade war, or other governmental action related to tariffs or trade agreements or policies has the potential to adversely impact our supply chain, our costs, our suppliers, and the US economy, which could in turn adversely affect our business, financial condition and results of operation.

For example, in January 2018, in response to a petition filed under Section 201 of the Trade Act of 1974, President Trump imposed four-year tariffs on imported solar modules and imported solar cells not assembled into other products (the "Section 201 Module Tariffs") that apply to all imports above a 2.5 gigawatts (GW) annual threshold. The Section 201 Module Tariffs were 30% in 2018 and stepped down by 5% annually in the second, third and fourth years. In October 2020, President Trump issued a proclamation increasing the tariff from 15% to 18% for 2021, the final year under the original Sec. 201 proclamation imposing the tariffs.

The Peterson Institute for International Economics or PIIE reported in April 2022 that Chinese exports to the U.S. currently incur an average 19.3% tariff, which amount is more than 600% of the prevailing domestic tariff before trade tensions escalated, and much higher than the current 3.0% average U.S. tariff on products originating in other countries. The PIIE report also indicated that on February 7, 2022, the U.S. reduced its Section 201 tariffs on solar panels among other products, which indicates a potential easing of U.S.-China trade tariffs under the current administration.

Our business prospects could be harmed if solar energy is not widely adopted or sufficient demand for solar energy systems does not

develop or takes longer to develop than we anticipate.

The solar energy market is at a relatively early stage of development. The extent to which solar energy will be widely adopted and the extent to which demand for solar energy systems will increase are uncertain. If solar energy does not achieve widespread adoption or demand for solar energy systems fails to develop sufficiently, we might be unable to achieve our revenue and profit targets. Demand for solar energy systems in our targeted markets might not develop as we anticipate. Many factors may affect the demand for solar energy systems, including the following:

- availability of government and utility company subsidies and incentives to support the development of the solar energy industry;
- government and utility policies regarding the interconnection of solar energy systems to the utility grid;
- fluctuations in economic and market conditions that affect the viability of conventional and non-solar renewable energy sources, such as changes in the price of natural gas and other fossil fuels;
- cost-effectiveness (including the cost of solar modules), performance and reliability of solar energy systems compared with conventional and other non-solar renewable energy sources and products;
- success of other renewable energy generation technologies, such as hydroelectric, wind, geothermal, solar thermal, concentrated solar and biomass;
- availability of customer financing with economically attractive terms;
- fluctuations in expenditures by purchasers of solar energy systems, which tend to decrease in slower economic environments and periods of rising interest rates and tighter credit; and
- deregulation of the electric power industry and the broader energy industry.

Our business has benefited from the declining cost of solar energy system components, and might be harmed to the extent that declines in the cost of such components stabilize or that such costs increase in the future.

Our business has benefited from the declining cost of solar energy system components and to the extent such costs stabilize or decline at a slower rate, or, in fact, increase, our future growth rate may be negatively impacted. The declining cost of solar energy system components and the raw materials necessary to manufacture them has been a key driver in the price of solar energy systems we own, the prices charged for electricity and customer adoption of solar energy. Solar energy system component and raw material prices might not continue to decline at the same rate as they have over the past several years or at all, and growth in the solar industry and the resulting increase in demand for solar energy system components and the raw materials necessary to manufacture them might also put upward pressure on prices. An increase of solar energy system components and raw materials prices could slow our growth and cause our business and results of operations to suffer, and the cost of solar energy system components and raw materials has and could continue to increase due to scarcity of materials, tariff penalties, duties, the loss of or changes in economic governmental incentives or other factors.

Although average selling prices of solar modules in many global markets have declined for several years, recent spot pricing for solar modules has increased, in part, due to elevated commodity and freight costs

While average selling prices of solar modules in many global markets have declined for several years, recent spot pricing for solar modules has increased, in part, due to elevated commodity and freight costs. The price of polysilicon has significantly increased in recent months due to a coal shortage in China, which resulted in higher energy prices and the Chinese government's mandating power restrictions that led to curtailments of silicon metal production. Given that the majority of global polysilicon capacity is located in China, such higher energy prices and reduced operating capacities have adversely affected the supply of polysilicon, contributing to an increase in polysilicon pricing. In response to such supply shortage, certain other Chinese-based producers of polysilicon are in the process of expanding their production capacity, which is expected to reduce the price of polysilicon in future periods. While the duration of this elevated period of spot pricing is uncertain, module average selling prices in global markets are expected to decline in the long-term, and we believe manufacturers of solar cells and modules, particularly those in China, have significant installed production capacity, relative to global demand, and the ability for additional capacity expansion. We believe the solar industry might experience periods of structural imbalance between supply and demand (i.e., where production capacity exceeds global demand), and that excess capacity will put pressure on pricing, and intense competition at the system level may result in an environment in which pricing falls rapidly, thereby potentially increasing demand for solar energy solutions but constraining the ability for project developers and module manufacturers to sustain meaningful and consistent profitability. We consequently continue to focus on our strategies and points of differentiation, which include our advanced module technology, our manufacturing process, our research and development capabilities, and the sustainability advantage of our modules.

Shortages in the supply of silicon could adversely affect the availability and cost of the solar photovoltaic modules used in our solar energy systems.

Shortages of silicon or supply chain issues could adversely affect the availability and cost of our solar energy systems. Manufacturers of photovoltaic modules depend upon the availability and pricing of silicon, one of the primary materials used in photovoltaic modules. The worldwide market for silicon from time to time experiences a shortage of supply, which can cause the prices for photovoltaic modules to increase and supplies of photovoltaic modules become difficult to obtain. While we have been able to obtain sufficient supplies of solar photovoltaic modules to satisfy our needs to date, this may not be the case in the future. Future increases in the price of silicon or other materials and components could result in an increase in costs to us, price increases to our customers or reduced margins. Other international trade conditions such as work slowdowns and labor strikes at port facilities or major weather events can also adversely impact the availability and price of solar photovoltaic modules.

Due to the lingering effects of the COVID-19 pandemic the solar industry is experiencing supply constraints, which are resulting in an increase in the cost of solar modules and inverters. If the supply constraints and price increases continue our solar business might be affected.

The primary driver of current supply constraints in the solar industry is material shortages. In 2020, the solar industry experienced record growth

in the United States, despite the COVID-19 pandemic, compared to 2019, and installations increased by 43 percent, according to the Solar Energy Industries Association (SEIA). This record demand, coupled with decreased supply, has impacted many key materials throughout the solar supply chain, including polysilicon, solar glass, and semiconductor chips. Polycrystalline silicon, commonly referred to as polysilicon, is a key raw material used in many solar cells, which are responsible for capturing the energy from the sun and turning it into electricity in solar energy systems. Polysilicon is largely produced in China, but factory shutdowns related to the COVID-19 pandemic caused the price of the raw material to spike. Solar modules also include glass casing at the front of the module, which protects the solar cells, there has been recent growing demand for bifacial solar modules, which produce energy from both sides of the module, requiring glass on both sides of the solar module, as opposed to just on the front. In 2018, China, the largest producer of solar glass, imposed restrictions on glass production due to concerns about the required energy consumption. With increasing demand for solar modules, and for solar glass specifically, the restricted production of glass has been unable to meet the demand, causing the cost of solar glass to soar. In December 2020, China's Ministry of Industry and Information Technology (MIIT) indicated that it would ease restrictions on the production of solar glass. While solar glass supply is expected to remain constrained short-term, increased capacity due to these eased restrictions should expand supply later this year and reduce prices. Semiconductor chips are a key component of inverters, which convert the direct current (DC) energy produced by solar modules into usable alternating current (AC) energy. Inverters are also used for battery storage systems to convert storable DC energy to usable AC energy and vice versa. The use of semiconductor chips is not isolated to the solar industry; they are also crucial components of many other technologies, including cars, computers, and smartphones. Due to COVID-19 related factory shutdowns, manufacturing of semiconductor chips decreased in early 2020, and as factories began to reopen, demand for products containing semiconductor chips surged. The shortages of these materials and attendant price increases may affect our distribution of solar products and our installation of solar energy systems, and future increases in the price of silicon or other materials and components could result in an increase in costs to us, price increases to our customers or reduced margins.

Due to the COVID-19 pandemic, global spending on goods significantly increased global shipping resulting in increased costs and delays. Our company depends on international shipping to obtain our solar products used in our distribution and installation businesses, and if such shipping constraints and price increases continue, our solar business might be affected.

The solar industry has also faced constraints related to shipping. Pandemic-related spending on goods increased global shipping, leading to shortages in containers and port congestion in the United States, impacting virtually every sector, including the solar industry. National lockdowns restricted both manufacturing and shipping as the pandemic began, and many shipping containers, such as those used to hold goods such as solar modules, became stranded and started to accumulate in the United States. Lockdowns continued in the United States as restrictions in China eased, and containers could not be returned to China, which caused a container shortage in China where containers were needed to continue exporting goods. Production of containers also decreased in 2020, further contributing to the shortage and causing prices of shipping containers to escalate. Increased imports, resulting from pandemic spending, has also increased port congestion in the United States, which congestion is exacerbated by significant recent increases in the size of container ships leading to longer unloading times, since each ship can now carry tens of thousands of shipping containers. If the shipping constraints and the increases in shipping costs continue for a long period of time our solar business might be affected. Future delays in shipping and increases in shipping costs or other materials could result in an increase in costs to us, price increases to our customers or reduced margins.

A May 2022 IHS Markit article noted that COVID-19 related supply chain challenges and issues in shipping products from China to the U.S. have continued due to sustained congestion and other delays at both U.S and Chinese ports, as well as an insufficient number of shipping containers. The shipping challenges have also contributed to higher container shipping rates between China and the U.S., and the article reports that the rate in May 2022 of a typical 40-foot container from China to the U.S. West Coast was \$14,226, several thousand dollars more than the comparable rate from China to ports in Northern Europe. The article also noted that in increasing number of ships which are operating at only partial capacity is magnifying the port congestion and delays in unloading cargo.

Due to the lingering effects of the COVID-19 pandemic the roofing industry is experiencing supply constraints, which are resulting in scarcity and an increase in the cost of lumber. If the supply constraints and price increases of lumber continue our roofing business may be affected.

Significant supply constraints and price increases in the lumber SJ America uses in its roofing business have occurred due to COVID-19 driven layoffs and plant closings. Lumber prices have been highly volatile since the onset of the COVID-19 pandemic and the following supply chain disruptions. In the event our ability to source lumber continues to be restricted or the prices of lumber continue to increase, the roofing business of SJ America may be affected. We hope these supply issues are only short term, but there can be no assurance as to the timing when these supply constraints will end. Future increases in the price of lumber or scarcity of lumber could result in an increase in costs to us, price increases to our customers or reduced margins.

Our solar business installs solar energy systems, and many factors can prevent us from completing installations on time or on budget.

Factors that might prevent us from completing installations on time or on budget include:

- shortages of materials;
- shortages of skilled labor;
- unforeseen installation scheduling, engineering, excavation, environmental or geological problems;
- job site issues that were not apparent during site inspection;
- natural disasters, hurricanes, weather interference, fires, earthquakes or other casualty losses or delays;
- delays in obtaining or inability to obtain or maintain necessary licenses or permits;
- changes to plans or specifications;
- performance by subcontractors;
- disputes with subcontractors; and
- unanticipated cost increases in materials, labor or other elements of our projects beyond budgets and allowances for contingencies.

Our installation projects expose us to risks of cost overruns due to typical uncertainties associated with any project or changes in the designs, plans or concepts of such projects, and installation costs might exceed estimated costs of completion.

A material reduction in the retail price of electricity charged by electric utilities or other retail electricity providers would harm our business, financial condition and results of operations.

Decreases in the retail price of electricity from electric utilities or from other retail electric providers, including other renewable energy sources such as larger-scale solar energy systems, could make our offerings less economically attractive. The price of electricity from utilities could decrease as a result of:

- the construction of a significant number of new power generation plants, whether generated by natural gas, nuclear power, coal, or renewable energy technologies;
- the construction of additional electric transmission and distribution lines;
- a reduction in the price of natural gas or other natural resources as a result of increased supply due to new drilling techniques or other technological developments, relaxation of associated regulatory standards, or broader economic or policy developments;
- less demand for electricity due to energy conservation technologies and public initiatives to reduce electricity consumption or to recessionary economic conditions; and
- development of competing energy technologies that provide less expensive energy.

A reduction in electric utilities' rates or changes to peak hour pricing policies or rate design (such as the adoption of a fixed or flat rate) could also make our offerings less competitive with the price of electricity from the electrical grid. If the cost of energy available from electric utilities or other providers were to decrease relative to solar energy generated from residential systems or if similar events impacting the economics of our offerings were to occur, we might have difficulty attracting new customers or existing customers might default or seek to terminate, cancel or otherwise avoid the obligations under their solar service agreements.

Our ability to provide our solar product and service offerings to homeowners in the US on an economically viable basis depends in part on our ability to arrange financing for these systems. Failure to find partners to provide such financing to our consumers would pose a significant obstacle for us to sustain the US consumer business.

We currently have only indirect partnership relationships with consumer financing providers, through a third-party platform. We are in the process of establishing direct relationships with several financing providers; however, we can give no assurance whether or when we can establish such relationships. Historically, there have been a limited number of investors that generate sufficient profits and possess the requisite financial sophistication to provide financing for solar energy systems for homeowners, and a lack of depth in this market might limit our ability to find partners which can provide financing for our consumers. Our larger competitors might be able far more readily than we to offer financing options to customers, including PPAs, pursuant to which solar energy systems are installed at little cost to the consumer.

Certain types of home solar energy system financing also depend on the existing tax regulatory environment. We are uncertain whether this type of financing will continue to be available to us, as the legal and regulatory landscape may shift in a manner that reduces or eliminates the attractiveness of such financing opportunities.

Our continued success requires us to hire, train and retain qualified personnel and subcontractors in a competitive industry.

The success of our business depends on our ability to attract, train and retain qualified, reliable personnel, including, but not limited to, our executive officers and key management personnel. We also rely on engineers, project management personnel, and other employees and qualified subcontractors who possess the necessary and required experience and expertise to perform their respective services at a reasonable and competitive rate. Competition for these and other experienced personnel is intense, and it might be difficult to attract and retain qualified individuals with the requisite expertise and within the time frame demanded by our customers. We might not be able to satisfy the demand for our services in certain regions because of our inability to successfully hire, train and retain qualified personnel, and we might find it difficult to replace personnel who hold credentials that might be required to perform certain government projects and/or who have significant government contract experience.

We note that the cost of providing our services, including the extent to which we utilize our workforce, affects our profitability. The uncertainty of contract award timing can present difficulties in matching our workforce size with our contracts, and should an expected contract award be delayed or not received, we could incur costs resulting from excess staff or redundancy of facilities that could have a material adverse impact on our business, financial condition and results of operations.

If we are unable to attract, train and retain technical personnel, our business may be materially and adversely affected.

Our future success depends, to a significant extent, on our ability to attract, train and retain technical personnel. Recruiting and retaining qualified technical personnel, particularly those with expertise in the solar power industry, is vital to our success. There is substantial competition for qualified technical personnel, and there can be no assurance that we will be able to attract or retain sufficient qualified technical personnel, and if we are unable to attract and retain qualified employees, our business might be materially and adversely affected.

Changes in general or local economic conditions and the resulting impact on the labor market and on our joint venture partners might make it difficult to attract or retain qualified individuals in the geographic areas where we perform our work, and if we are unable to provide competitive compensation packages, high-quality training programs and attractive work environments or to establish and maintain successful partnerships, our reputation, relationships and/or ability to profitably execute our work could be adversely impacted.

Failure to maintain safe work sites could result in significant losses .

Construction and maintenance sites are potentially dangerous workplaces and often put our employees and others in close proximity with mechanized equipment, moving vehicles, chemical and manufacturing processes, and highly regulated materials. We are often responsible for safety and must implement safety procedures. Should our safety procedures prove ineffective or incomplete, we might suffer injury to our employees, and expose the company to litigation. Our failure to maintain adequate safety standards through our safety programs could result in reduced profitability or the loss of projects or clients, and could have a material adverse impact on our financial position, results of operations, cash flows and liquidity.

Failure of our subcontractors to perform as anticipated could have a negative impact on our results.

We subcontract portions of some of our contracts to specialty subcontractors, but we are ultimately responsible for the successful completion of their work. Although we seek to require bonding or other forms of guarantees, we are not always successful in obtaining those bonds or guarantees from our higher-risk subcontractors. We might be responsible for the failures on the part of our subcontractors to perform as anticipated, resulting in a potentially adverse impact on our cash flows and liquidity, and the total costs of a project could exceed our original estimates and we could experience reduced profits or a loss for that project, which could have an adverse impact on our financial position, results of operations, cash flows and liquidity.

Compliance with occupational safety and health requirements and best practices can be costly, and noncompliance with such requirements might result in potentially significant monetary penalties, operational delays and adverse publicity.

The installation and ongoing operations and maintenance of roofing products or roof-top solar energy systems requires individuals hired by us or third-party contractors, including our employees, to work at heights with complicated and potentially dangerous electrical systems.

The evaluation and modification of buildings as part of the installation process requires these individuals to work in locations that may contain potentially dangerous levels of asbestos, lead, mold or other materials known or believed to be hazardous to human health. There is substantial risk of serious injury or death if proper safety procedures are not followed. Our operations are subject to regulation OSHA and equivalent state and local laws, and changes to OSHA requirements, or stricter interpretation or enforcement of existing laws or regulations, could result in increased costs. If we fail to comply with applicable OSHA, even if no work-related serious injury or death occurs, we might be subject to civil or criminal enforcement and be required to pay substantial penalties, incur significant capital expenditures or suspend or limit operations. Because individuals hired by us or on our behalf to perform installation and ongoing operations and maintenance of our solar energy systems and energy storage systems, including our dealers and third-party contractors, are compensated on a per project basis, they are incentivized to work more quickly than installers that are compensated on an hourly basis. While we have not experienced a high level of injuries to date, this incentive structure may result in higher injury rates than others in the industry and could accordingly expose us to increased liability. Individuals hired by or on behalf of us may have workplace accidents and receive citations from OSHA regulators for alleged safety violations, resulting in fines. Any such accidents, citations, violations, injuries or failure to comply with industry best practices may subject us to adverse publicity, damage our reputation and competitive position and adversely affect our business. A failure to comply with laws and regulations relating to interactions by us or our dealers with current or prospective residential customers could result in negative publicity, claims, investigations and litigation, and adversely affect our financial performance.

Our business substantially focuses on transactions with residential customers. We must comply with numerous federal, state and local laws and regulations that govern matters relating to interactions with residential consumers, including those pertaining to consumer protection, marketing and sales, privacy and data security, consumer financial and credit transactions, mortgages and refinancing, home improvement contracts, warranties and various means of customer solicitation. These laws and regulations are dynamic and subject to potentially differing interpretations, and various federal, state and local legislative and regulatory bodies may initiate investigations, expand current laws or regulations, or enact new laws and regulations, regarding these matters. Changes in these laws or regulations or their interpretation could dramatically affect how we and our dealers do business, acquire customers, and manage and use information collected from and about current and prospective customers and the costs associated therewith.

We strive to comply with all applicable laws and regulations relating to interactions with residential customers. It is possible, however, that these requirements might be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our customary practices.

Damage to our brands and reputation, or change or loss of use of our brands, could harm our business and results of operations.

We depend significantly on our reputation for high-quality products, excellent customer service and the brand names "Solar Juice," "Opal," "Solar4America," and "Roofs 4 America" to attract new customers and grow our business. If SJ Australia fails to continue to deliver solar and other energy components timely, or if SJ America damages any of our customers' properties or delays or cancels projects, our brand and reputation could be significantly impaired. Future technological improvements might allow us to offer lower prices or offer new technology to new customers; however, technical limitations in our current solar energy systems and energy storage systems might prevent us from offering such lower prices or new technology to our existing customers. The inability of our current customers to benefit from technological improvements could cause our existing customers to lower the value they perceive our existing products offer and impair our brand and reputation.

We note that given the sheer number of interactions our consumer business has with customers and potential customers, it is inevitable that some customer interactions with our company or dealers operating on our behalf will be perceived as less than satisfactory. These could lead to instances of customer complaints which could affect our ratings on websites and social media platforms, and if we cannot manage our hiring and training processes to avoid or minimize these issues to the extent possible, our reputation might be harmed and our ability to attract new customers would suffer.

We face competition from traditional energy companies as well as solar and other renewable energy companies.

The solar energy industry is highly competitive and continually evolving, as participants strive to distinguish themselves within their markets and compete with large utilities. We believe that our competitors include established utilities that supply energy to homeowners by traditional means, and we compete with these utilities primarily based on price, predictability of price, and the ease by which homeowners can switch to electricity generated by our solar service offerings. If we cannot offer compelling value to customers based on these factors, then our business and revenue will not grow. We also compete with traditional installers who face similar challenges.

The production of solar energy depends heavily on suitable meteorological and environmental conditions. If meteorological or environmental conditions are unexpectedly unfavorable, the electricity production from our solar service offerings might be below our customers' expectations, reducing the attractiveness of our offerings compared with traditional energy suppliers.

We also face competition from other residential solar service providers. Many of these competitors have a higher degree of brand name recognition, differing business and pricing strategies, and greater capital resources than we have, as well as extensive knowledge of our target markets. If we are unable to establish or maintain a consumer brand that resonates with customers, maintain high customer satisfaction, or compete with the pricing offered by our competitors, our sales and market share position might be adversely affected, as our growth is dependent on originating new customers.

We also face competitive pressure from companies that might offer lower-priced consumer offerings than we do.

We compete with companies that are not regulated like traditional utilities but that have access to the traditional utility electricity transmission and distribution infrastructure. These power service companies are able to offer customers electricity supply-only solutions that are competitive with our solar service offerings on both price and usage of solar energy technology, which might limit our ability to attract customers, particularly those who wish to avoid long-term contracts or have an aesthetic or other objection to putting solar modules on their roofs.

We also face competition from purely finance-driven nonintegrated competitors that subcontract out the installation of solar energy systems, from installation businesses (including solar partners) that seek financing from external parties, from large construction companies, and from electrical and other roofing companies. Local installers that might otherwise be viewed as potential solar partners might gain market share by being able to be the first providers in new local markets, and some of these competitors might provide energy at lower costs than we do. We also face competition from companies offering consumer loans for solar module products, since declining prices for solar modules and related equipment has resulted in an increase in consumers' purchasing, instead of leasing, solar energy systems.

As the solar industry grows and evolves, we will continue to face existing competitors as well as new competitors who are not currently in the market (including those resulting from the consolidation of existing competitors) that achieve significant developments in alternative technologies or new products such as storage solutions, loan products, or other programs related to third-party ownership. Our failure to adapt to changing market conditions, to compete successfully with existing or new competitors and to adopt new or enhanced technologies could limit our growth and have a material adverse effect on our business and prospects.

Changes to net metering and related policies might significantly reduce demand for electricity from our solar service offerings.

A substantial majority of states have adopted net metering policies, which are designed to allow homeowners to serve their own energy loads using on-site generation. Electricity that is generated by a solar energy system and consumed on-site avoids a retail energy purchase from the applicable utility, and excess electricity that is exported back to the electric grid generates a retail credit within a homeowner's monthly billing period. At the end of the monthly billing period, if the homeowner has generated excess electricity within that month, the homeowner typically carries forward a credit for any excess electricity to be offset against future utility energy purchases. At the end of an annual billing period or calendar year, utilities either continue to carry forward a credit, or reconcile the homeowner's final annual or calendar year bill using different rates (including zero credit) for the exported electricity.

Utilities, their trade associations, and fossil fuel interests in the country are currently challenging net metering policies, and seeking to eliminate them, cap them, reduce the value of the credit provided to homeowners for excess generation, or impose charges on homeowners that have net metering.

California's Public Utilities Commission ("CPUC") has made changes to rate design for solar customers, such as adopting "time of use" rates with different electricity prices during peak and off peak hours, as well as modifications to the minimum bill for solar customers. The CPUC is revisiting its net metering policy in a proceeding that began in the third quarter of 2020 and is expected to conclude near the end of 2021 and not take effect until sometime in 2022. The California investor-owned utilities, along with other parties, are seeking to reduce the level of compensation for customer-owned generation and to impose grid access fees on solar customers. Similarly, certain California municipal utilities, which are not regulated by the CPUC and would not be governed by the CPUC's net metering policy, have also announced they plan to review their net metering policies.

Electric utility statutes and regulations and changes to such statutes or regulations might present technical, regulatory and economic barriers to the purchase and use of our solar service offerings that may significantly reduce demand for such offerings.

Federal, state and local government statutes and regulations concerning electricity heavily influence the market for our solar service offerings and are constantly evolving. These statutes, regulations, and administrative rulings relate to electricity pricing, net metering, consumer protection, incentives, taxation, competition with utilities, and the interconnection of homeowner-owned and third party-owned solar energy systems to the electrical grid. Governments, often acting through state utility or public service commissions, change and adopt different rates for residential customers on a regular basis and these changes can have a negative impact on our ability to deliver savings, or energy bill management, to customers.

Many utilities, their trade associations, and fossil fuel interests, which have significantly greater economic, technical, operational, and political resources than the residential solar industry, are currently challenging solar-related policies to reduce the competitiveness of residential solar energy. Any adverse changes in solar-related policies could have a negative impact on our business and prospects.

Regulations and policies related to rate design could deter potential customers from purchasing our solar service offerings, reduce the value of the electricity our systems produce, and reduce any savings that our customers could realize from our solar service offerings.

All states regulate investor-owned utility retail electricity pricing, and there are numerous publicly owned utilities and electric cooperatives that establish their own retail electricity pricing through some form of regulation or internal process. These regulations and policies could deter potential customers from purchasing our solar service offerings. California, our primary state of operations, has one of the most aggressive rate design pricing regimes, which includes high electricity rates and incentives for consumers to transition to solar energy and other types of renewable energy. Texas is another state in which we operate, and in contrast has electricity pricing which is much lower than the national average, as its policy emphasizes cheaper power rather than green energy incentives. Nevada is a third state in which we operate, and has an electricity rate regime more similar to that of Texas than California. Utilities in still other states such as Arizona and Utah have sought and secured rate design changes that reduce credit for residential solar exports to below the retail rate and impose new charges for rooftop solar customers, and other state utilities might follow suit. Such rate changes can include changing rates to charge lower volume-based rates—the rates charged for kilowatt hours of electricity purchased by a residential customer—while raising unavoidable fixed charges that homeowners are subject to when they purchase solar energy from third parties and levying charges on homeowners based on their point of maximum demand during a month (referred to as "demand charge"). Such forms of rate design could adversely impact our business by reducing the value of the electricity our solar energy systems produce compared to retail net metering, and reducing any savings customers realize by purchasing our solar service offerings. In addition to changes in general electricity rates charged to all residential customers, utilities are increasingly seeking solar-specific charges (which may be fixed charges, capacity-based charges, or other rate charges). Any of these changes could materially reduce the demand for our offerings and could limit the number of markets in which our offerings are competitive with electricity provided by the utilities.

Interconnection limits or circuit-level caps imposed by regulators might significantly reduce our ability to sell our solar service offerings in certain markets or slow interconnections.

Interconnection rules establish the circumstances in which rooftop solar will be connected to the electricity grid, and interconnection limits or circuit-level caps imposed by regulators may curb our growth in key markets. Utilities throughout the country have different rules and regulations regarding interconnection and some utilities cap or limit the amount of solar energy that can be interconnected to the grid. Our systems do not provide power to customers until they are interconnected to the grid.

Interconnection regulations are based on claims from utilities regarding the amount of solar energy that can be connected to the grid without causing grid reliability issues or requiring significant grid upgrades. Some states require the activation of some advanced inverter functionality to head off presumed grid reliability issues, which might require more expensive equipment and more oversight of the operation of the solar energy systems over time. Such regulations might hamper our ability to sell our offerings in certain markets and increase our costs, adversely affecting our business, operating results, financial condition, and prospects. These advanced functions will become more commonplace as regions start to require 1547-2018 inverters, with activation of some advanced functions starting January 2022 in Colorado and elsewhere.

We might not be able to obtain sufficient raw materials in a timely manner or on commercially reasonable terms, which could have a material adverse effect on our results of operations and financial condition.

Although the global supply of polysilicon has increased significantly, we might experience interruption to our supply of silicon or other raw materials or late delivery in the future for the following reasons, among others:

- suppliers under our raw materials supply contracts might delay deliveries for a significant period of time without incurring penalties;
- our virgin polysilicon suppliers might not be able to meet our production needs consistently or on a timely basis;
- compared with us, some of our competitors who also purchase virgin polysilicon from our suppliers have longer and stronger relationships with and have greater buying power and bargaining leverage over some of our key suppliers; and
- our supply of silicon or other raw materials is subject to the business risk of our suppliers, some of whom have limited operating history and limited financial resources, any one or more of which could go out of business for reasons beyond our control.

Our failure to obtain the required amounts of silicon raw materials and other raw materials, such as glass, in a timely manner and on commercially reasonable terms could increase our manufacturing costs and substantially limit our ability to meet our contractual obligations to our customers. Any failure by us to meet such obligations could have a material adverse effect on our reputation, ability to retain customers, market share, business and results of operations and may subject us to claims from our customers and other disputes. Our failure to obtain sufficient silicon and other raw materials would result in under-utilization of our production facilities and an increase in our marginal production costs, and any of the above events could have a material adverse effect on our growth, profitability and results of operations.

Failure to achieve satisfactory production volumes of our solar module products could result in higher unit production costs.

The production of solar modules involves complex processes. Deviations in the manufacturing process can cause a substantial decrease in output and, in some cases, disrupt production significantly or result in no output. From time to time, we have experienced lower-than-anticipated manufacturing output during the ramp-up of production lines, which can occur during the introduction of new products, the installation of new equipment or the implementation of new process technologies. As we bring additional lines or facilities into production, we might operate at less than intended capacity during the ramp-up period, and the demand in global solar power product markets might decrease, including the demand for solar modules, which could cause us to operate at less than intended capacity, and result in higher marginal production costs and lower output, which could have a material adverse effect on our business, financial condition and results of operations.

Performance shortcomings in our products might cause us to incur additional expenses and warranty costs, damage our reputation and cause our sales to decline.

Our products might contain defects that are not detected until after they are shipped or inspected by our customers.

Our solar modules are typically sold with a 10-year warranty for material and workmanship and a 25-year (30-year for dual glass module) linear power output warranty against the maximum degradation of the actual power output for each year after the warranty start date, and if a solar module is defective during the relevant warranty period, we will either repair or replace the solar module. As we continue to increase our sales to the major export markets, we might be exposed to increased warranty claims. Product defects could cause significant damage to our market reputation and reduce our product sales and market share, and our failure to maintain the consistency and quality throughout our production process could result in substandard quality or performance of our products. If we deliver our products with defects, or if there is a perception that our products are of substandard quality, we might incur substantially increased costs associated with returns or replacements of our products, our credibility and market reputation could be harmed and our sales and market share may be materially adversely affected.

Our lack of sufficient patent protection in and outside of US might undermine our competitive position and subject us to intellectual property disputes with third parties, both of which might have a material adverse effect on our business, results of operations and financial condition.

We have developed various production process related know-how and technologies, which have a critical role in our quality assurance and cost reduction. We have also implemented our research and development programs to develop techniques and processes that will improve production efficiency and product quality. Our intellectual property and proprietary rights from our research and development programs will be crucial in maintaining our competitive edge in the solar power industry. As of the date of this prospectus, we have two patents and two other pending patent applications in the US. Our patents' validity is generally ten years, and we plan to sustain protection for our intellectual property and proprietary knowledge with patents and otherwise, but cannot assure you that we will be successful in obtaining patents in the US in a timely manner or at all. We also use contractual arrangements with employees and trade secret protections to protect our intellectual property and proprietary rights, but contractual arrangements afford

only limited protection and the actions we might take to protect our intellectual property and proprietary rights might not be adequate. Other parties might obtain knowledge of our know-how and technologies through independent development, and our inability to protect our production process, related know-how and technologies, our intellectual property and proprietary rights or any combination of the above might undermine our competitive position. Third parties may infringe upon or misappropriate our proprietary technologies or other intellectual property and proprietary rights. Policing unauthorized use of proprietary technology can be difficult and expensive, and litigation can be costly and diverts management attention and other resources away from our business, but might be necessary to enforce our intellectual property rights, protect our trade secrets or determine the validity and scope of our proprietary rights. We cannot assure you that we will prevail in any potential litigation, and an adverse determination might impair our intellectual property and proprietary rights and harm our business, prospects and reputation.

Risks Related to Our Operation in Phoenix

The Company's investment in Phoenix Cars LLC and Phoenix Motorcars Leasing LLC (together, "Phoenix") is highly risky. Following are material risks related to the investment.

Our results of Phoenix operations have not resulted in profitability, and may not be able to achieve profitability going forward.

Phoenix had accumulated deficit of \$28.6 million as of December 31, 2022. Phoenix have incurred a net loss of \$12.7 million and \$14.6 million, for the years ended December 31, 2022 and 2021, respectively. Phoenix may incur significant losses in the future and may encounter unforeseen expenses, difficulties, complications, delays and other unknown events. Its management is developing plans to alleviate the negative trends and conditions described above and there is no guarantee that such plans will be successfully implemented. Its business plan is focused on providing sustainable and cost-effective solutions to the commercial transportation sector but is still unproven. There is no assurance that even if we successfully implement our business plan, that Phoenix will be able to curtail its losses or ever achieve profitable operations.

Phoenix has yet to achieve positive cash flow and, given its projected funding needs, its ability to generate positive cash flow is uncertain.

Phoenix has had negative cash flow from operating activities of \$14.9 million and 12.9 million for years ended December 31, 2022 and 2021. Phoenix anticipate that it will continue to have negative cash flow from operating and investing activities through the remainder of 2023 as it expects to incur research and development, sales and marketing, and general and administrative expenses and make capital expenditures in its efforts to increase sales and ramp up operations. Its business also will at times require significant amounts of working capital to support its growth. An inability to generate positive cash flow for the near term may adversely affect its ability to raise needed capital for its business on reasonable terms, diminish supplier or customer willingness to enter into transactions with Phoenix, and have other adverse effects that may decrease its long-term viability. There can be no assurance that Phoenix will achieve positive cash flow in the near future or at all.

Phoenix may need to raise additional financing for the remainder of 2023, and such financing may not be available to Phoenix on acceptable terms or at all.

Although we believe Phoenix has sufficient capital resources and capital availability to meet its needs for the remainder of 2023, we expect that Phoenix will not be able to maintain the levels of capital and operating expenditures necessary to perform its current business plan, including launch and ramp of its Gen 4 products unless Phoenix generates additional cash from operations or obtain additional financing. In light of its operating history and the expected schedule to bring Gen 4 to market, we expect that it will be necessary to obtain additional financing, either through the existing SEPA equity line to issue registered shares, private placement of un-registered shares, or debt financing. We cannot be certain that additional financing will be available to Phoenix on favorable terms when required, or at all. Recent turmoil in the capital markets, including the tightening of credit and rise of interest rates, may cause Phoenix to face higher borrowing costs, less available capital, more stringent terms and tighter covenants. In such circumstances, if Phoenix cannot raise additional capital, its financial condition, results of operations, business and prospects could be materially and adversely affected. In addition, if Phoenix raises additional capital through issuances of equity, through the SEPA or otherwise, Phoenix's stockholders could experience dilution.

The automotive market is highly competitive, and Phoenix may not be successful in competing in this industry.

Both the automobile industry generally, and the EV segment in particular, are highly competitive, and Phoenix will be competing for customers and sales with both EV manufacturers and traditional automotive companies. Most of its current and potential competitors may have significantly greater financial, technical, manufacturing, marketing, or other resources than Phoenix does and may be able to devote greater resources to the design, development, manufacturing, distribution, promotion, sale and support of their products than Phoenix may devote to its products. Phoenix expects competition for EVs to intensify due to increased demand and a regulatory push for alternative fuel vehicles. In addition, as fleet operators begin transitioning to EVs on a mass scale, Phoenix expects that more well-financed competitors will enter the commercial fleet EV market. Further, as a result of new entrants in the commercial fleet EV market, Phoenix may experience increased competition for components and other parts of its vehicles, which may have limited or single-source supply.

If Phoenix is unable to successfully design, develop, manufacture and sell its Gen 4, Gen 5, EF-1 truck and EF-1 V van, its business, prospects, financial condition, results of operations, and cash flows could be materially and adversely affected. If Phoenix is able to manufacture and market the Gen 4, Gen 5, EF-1 truck and EF-1 V van, factors affecting competition include product performance and quality, technological innovation, customer experience, brand differentiation, product design, pricing and TCO, and manufacturing scale and efficiency. Increased competition will lead to lower vehicle unit sales and increased inventory, which may result in downward price pressure and adversely affect its business, prospects, financial condition, results of operations, and cash flows.

Phoenix may face competition from global automotive manufacturers.

Phoenix competes with a number of commercial EV manufacturers, including those such as Lightning eMotors, GreenPower Bus, SEA Electric and Arrival. In addition to Tesla & Rivian, a number of traditional global automobile manufacturers, including Ford, General Motors, Mercedes Benz, and Nissan-Renault- Mitsubishi-Toyota, have entered the consumer EV business, and a few, including BYD, Ford, General Motors, Tesla and Daimler have begun entry into the commercial EV market. These companies have far greater resources, brand recognition, and distribution channels than Phoenix or the Company does, which could make it difficult for Phoenix to gain widespread market acceptance. There can be no assurance that Phoenix will be able to compete successfully with other market participants, and, if Phoenix cannot, then its business could fail.

Phoenix will continue to require additional capital to fund its operations, and if Phoenix fails to obtain necessary financing, Phoenix may not be able to complete the development and commercialization of its electric vehicles.

The design, manufacture and sale of electric vehicles is a capital-intensive business. Although Phoenix pursues an “asset light strategy” for growth, its business plan to design, produce, sell and service commercial electric buses, vans and trucks, including the Gen 4, Gen 5, EF-1 truck and EF-1 V van, is expected to require continued capital investment and incur substantial costs including research and development expenses, raw material procurement costs, sales and distribution expenses as Phoenix builds its brand and market its vehicles, and general and administrative expenses as Phoenix scales its operations, identify and commit resources to investigate new areas of demand and incur costs as a public company. Its ability to become profitable in the future will not only depend on its ability to complete the design and development of its vehicles but also to control its capital expenditures and costs. As Phoenix expands its product portfolio, including the scheduled release of Gen 4 in 2023, Phoenix will need to manage costs effectively to sell those products at its expected margins. If Phoenix is unable to cost efficiently design, manufacture, market, sell and distribute and service its vehicles and provide its services, its business, prospects, financial condition, results of operations, and cash flows would be materially and adversely affected. Unlike established EV automotive manufacturers that have greater financial resources than Phoenix does, there can be no assurance that Phoenix will have access to the capital Phoenix needs on favorable terms when required or at all. In addition, future debt financing into which Phoenix enters may impose upon us covenants that restrict its operations, including limitations on its ability to incur liens or additional debt, pay dividends, redeem its stock, make certain investments and engage in certain merger, consolidation or asset sale transactions.

If Phoenix is unable to raise additional capital when required or on acceptable terms, Phoenix may be required to significantly delay, scale back or discontinue the development or commercialization of one or more of its EV products, restrict its operations or obtain funds by entering into agreements on unattractive terms, which would likely have a material adverse effect on its business, stock price and its relationships with third parties with whom Phoenix has business relationships, at least until additional funding is obtained. If Phoenix does not have sufficient funds to continue operations, Phoenix could be required to seek bankruptcy protection or other alternatives that would likely result in its stockholders losing some or all of their investment in us. In addition, its ability to achieve profitability or to respond to competitive pressures would be significantly limited.

Phoenix may experience delays in launching and ramping up production or Phoenix may be unable to control its manufacturing costs.

Phoenix has previously experienced and may in the future experience launch and production ramp-up delays. In addition, Phoenix may introduce in the future new or unique manufacturing processes and design features for its products including enhancements under development relating to production assembly efficiency, material component availability, cost reduction and customer feedback. There is no guarantee Phoenix will be able to successfully and timely introduce and scale such processes or features. Phoenix has limited experience to date in manufacturing electric vehicles at low volumes. To be successful, Phoenix will need to implement, maintain, and ramp-up efficient and cost-effective manufacturing capabilities, processes and supply chains, high quality and output rates planned at its Anaheim manufacturing facility. Phoenix also needs to hire, train, and compensate skilled employees for operations. Bottlenecks and other unexpected challenges such as those experienced in the past may arise during its production ramps, and Phoenix must address them promptly while continuing to improve manufacturing processes and reducing costs. If Phoenix is not successful in achieving these goals, Phoenix could face delays in establishing and/or sustaining its vehicle production ramp-ups or be unable to meet its related cost and profitability targets. Any delay or other complication in ramping up the production of its current products or the development, manufacture, launch and production ramp-ups of its future products, features and services, or in doing so cost-effectively and with high quality, may harm its brand, business, prospects, financial condition, and operating results.

Costs of electric vehicles are high in comparison with those of traditional vehicles powered by internal combustion engines or hybrids.

Phoenix's EVs will not gain wide acceptance unless Phoenix can reduce manufacturing and selling costs. Prices of Phoenix EVs range from \$165,000 to \$225,000, whereas prices of comparable traditional combustion engine vehicles range from approximately \$50,000 to \$80,000. The cost difference is due to the incremental cost of electric drivetrain, including lithium-ion batteries, motors, inverter and control software, coupled with the relatively low volume of production, leading to higher overheads.

In addition, government subsidies and incentives, including those available in California, are important for the cost-competitiveness of Phoenix's EVs, and Phoenix's growth and prospects depend in part on the availability and amounts of these subsidies and incentives. Any reduction, elimination or discriminatory application of government subsidies and incentives because of budgetary challenges, policy changes, the reduced need for such subsidies and incentives due to the perceived success of electric vehicles, or other reasons may impair the cost-competitiveness of Phoenix's EVs.

The range of Phoenix's existing EVs is limited, compared with that of traditional vehicles.

Whereas traditional combustion engine medium-duty vehicles may travel from 240 to 350 miles before refueling, Phoenix's existing EVs have a maximum range of 160 miles and minimum recharging time of five to six hours. Currently, Phoenix's EVs can be charged only at the owner's location or select public charging locations using compatible charging equipment, further limiting the EVs to local use. Accordingly, potential customers needing vehicles with longer ranges or quicker turnaround of depleted electric energy supply may find Phoenix's products relatively less attractive.

Phoenix may experience significant delays in the design, manufacture, financing, regulatory approval, launch and delivery of its vehicles, which could harm its business, prospects, financial condition, results of operations, and cash flows.

Phoenix's future business depends in large part on its ability to execute on its plans to develop, manufacture, market and sell its vehicles. Any delay in the financing, design, manufacture, regulatory approval, launch or delivery of its vehicles could materially damage its brand, business, prospects, financial condition, results of operations, and cash flows, and could cause liquidity constraints. Vehicle manufacturers often experience delays in the design, manufacture, and commercial release of new products. To the extent Phoenix delays the launch of its vehicles, its growth prospects could be adversely affected as Phoenix may fail to establish or grow its market share. Furthermore, Phoenix relies on third-party suppliers for the provision and development of the key components and materials used in its vehicles. To the extent its suppliers experience any delays in providing us with or developing necessary components Phoenix could experience delays in delivering on its timelines.

All of Phoenix's current range of products are built on Ford's E-450 chassis. A decision by Ford to offer an electric version of this chassis, directly, would impact the viability of Phoenix's current products.

Phoenix currently builds all its products on Ford's E-450 chassis. Ford does not offer an electric version of this chassis, due to the relatively small market size for medium-duty electric vehicles. As volumes increase, there is a potential risk of Ford's launching an electric version of Ford's E-450 chassis directly from the factory, negating the need for Phoenix's current range of products. Additionally, a shortage in the availability of this chassis would impact Phoenix's capability to produce and fulfill customer's orders in a timely manner.

Phoenix's future growth is dependent upon the willingness of operators of commercial vehicle fleets to adopt electric vehicles and upon its ability to produce, sell and service vehicles that meet their needs. If the market for commercial electric vehicles does not develop as Phoenix expects, or if it develops slower than Phoenix expects, its business, prospects, financial condition and operating results will be adversely affected.

Phoenix's growth requires adoption of commercial vehicle operators to adopt EVs for their fleets and on its ability to produce, sell and service vehicles that meet their needs. EVs' use in the medium-duty commercial vehicle market is a relatively new development, particularly in the United States, and is characterized by rapidly changing technologies and evolving government regulation, industry standards, and customer views of the merits of using electric vehicles in their businesses. This process has been slow, as, without including the impact of government or other subsidies and incentives, the purchase prices for Phoenix's EVs currently is higher than those for diesel-fueled vehicles. The relatively low price of oil has also hurt Phoenix's over the last few years.

Phoenix must educate fleet managers regarding the economic benefits that Phoenix believes result over the life of its EVs. Phoenix believes that these benefits depend on the following:

- the difference in the initial purchase prices of commercial electric vehicles and vehicles with comparable gross vehicle weight powered by internal combustion engines or hybrids, both including the effect of government and other subsidies and incentives designed to promote the purchase of electric vehicles;
- the total cost of ownership of the vehicle over its expected life, which includes the initial purchase price and ongoing operating and maintenance costs;
- the availability and terms of financing options for purchases of vehicles and, for commercial electric vehicles, financing options for battery systems;
- the availability of tax and other governmental incentives to purchase and operate electric vehicles and future regulations requiring increased use of nonpolluting vehicles;
- government regulations and economic incentives promoting fuel efficiency and alternate forms of energy;
- fuel prices, including volatility in the cost of diesel fuel;
- cost and availability of other alternatives to diesel fueled vehicles, such as vehicles powered by natural gas or hybrids;
- corporate sustainability initiatives;
- commercial electric vehicle quality, performance and safety (particularly with respect to lithium-ion battery packs);
- the quality and availability of service for the vehicle, including the availability of replacement parts;
- the range over which commercial electric vehicles may be driven on a single battery charge;
- access to charging stations and related infrastructure costs, and standardization of electric vehicle charging systems;
- electric grid capacity and reliability; and
- macroeconomic factors.

If, in weighing these factors, operators of commercial vehicle fleets determine that there is no compelling business justification for purchasing commercial EVs, the market for commercial EVs may not develop as, or may develop more slowly than, Phoenix expects which would adversely affect Phoenix's business, prospects, financial condition and operating results.

Phoenix has a limited number of customers, with which Phoenix does not have long-term agreements, and expects that a significant portion of its future sales will be from a limited number of customers. The loss of any of these customers could materially harm Phoenix's business.

A significant portion of Phoenix's projected future revenue is expected to be generated from a limited number of customers. Phoenix has no contracts with customers that include long-term commitments that ensure future sales of vehicles. The loss of or a reduction in sales or anticipated sales to Phoenix's most significant customers would have a material adverse effect on its business, prospects, financial condition and operating results.

An inability to attract new customers for its Gen 4 products and future generations of products will substantially impact its ability to grow revenue or improve its financial results.

Phoenix's growth will depend in large part on its ability to attract new customers. As Phoenix drives growth in its existing markets, and Phoenix anticipates that its sales activities will lead to additional orders and deliveries for its Gen 4 products, and, as a result, increase its base of customers. An inability to attract new customers would substantially impact its ability to grow revenue or improve its financial results. Further, Phoenix often receive binding and non-binding purchase orders from customers that are contingent on various factors, such as completing a successful pilot program, obtaining third-party financing or obtaining government grants, such as HVIP. In addition, some customers are interested in future products, not yet in its production. While Phoenix continuously strives to expand its product portfolio, developing new products takes a significant amount of time and expense, such as engineering work, sourcing new suppliers, marketing, testing and quality control. In addition, orders may be delayed for a number of reasons, many of which are beyond its control, including supplier delays, which may cause delays in its manufacturing process, or delays in customers obtaining financing. As a result, any such orders may not result in actual revenue in the near term or at all. Accordingly, revenue estimates and the amount and timing of work expected to be performed at the time the estimate of order backlog is developed is subject to change.

Phoenix may not be able to accurately estimate the supply and demand for its vehicles, which could result in a variety of inefficiencies in its business and hinder its ability to generate revenue. If Phoenix fails to accurately predict its manufacturing requirements, Phoenix could incur

additional costs or experience delays.

It is difficult to predict its future revenues and appropriately budget for its expenses, and Phoenix may have limited insight into trends that may emerge and affect its business. Phoenix will be required to provide forecasts of its demand to its suppliers several months prior to the scheduled delivery of products to its prospective customers. If Phoenix overestimates its requirements, its suppliers may have excess inventory, which indirectly would increase its costs. If Phoenix underestimates its requirements, its suppliers may have inadequate inventory, which could interrupt manufacturing of its products and result in delays in shipments and revenues. In addition, lead times for materials and components that its suppliers order may vary significantly and depend on factors such as the specific supplier, contract terms and demand for each component at a given time. If Phoenix fails to order sufficient quantities of product components in a timely manner, the delivery of vehicles to its customers could be delayed, which would harm its business, financial condition and operating results.

Phoenix faces various challenges in scaling manufacturing, assembling, and converting processes effectively and quickly from low volume production to high volume production for its Gen 4 drivetrain products.

Phoenix has no experience to date in high volume manufacturing, assembling, and converting to commercial electric vehicles. Phoenix does not know whether Phoenix will be able to develop efficient, low-cost manufacturing, assembly and converting capability and processes, and reliable sources of component supply that will enable us to meet the quality, price, engineering, design and production standards, as well as the production volumes Phoenix targets. Any failure to develop such manufacturing, assembly and converting processes and capabilities and reliable sources of component supply within its projected costs and timelines could have a material adverse effect on its business, prospects, operating results and financial condition. Even if Phoenix is successful in developing its high-volume manufacturing, assembly and converting capability and processes, and reliable sources of component supply, Phoenix does not know whether Phoenix will be able to do so in a manner that avoids significant delays and cost overruns, including as a result of factors beyond its control such as problems with suppliers and vendors, or in time to meet its commercialization schedules or to satisfy the requirements of customers. In addition, certain components Phoenix integrates may not be available on a consistent basis or in large quantities. Its business, prospects, financial condition and operating results could be adversely affected if Phoenix experiences disruptions in its supply chain or if Phoenix cannot obtain materials of sufficient quality at reasonable prices.

The complexity in Phoenix's business is expected to grow as Phoenix develop new products and services. Phoenix has limited experience in simultaneously designing, testing, manufacturing, upgrading, adapting and selling its electric drivetrains as well as limited experience allocating its available resources among the design and production of multiple electric drivetrains. As Phoenix add complexity to its product line and introduce new products and services, Phoenix may experience unexpected delays.

If Phoenix is unable to scale its existing assembly processes and systems quickly while maintaining its current quality level, including as a result of supply chain constraints and inability to manage complexity in its business, Phoenix may be unable to meet its customers' vehicle quality and quantity requirements or its forecasted production schedule or lower its cost of sales. As a result, Phoenix may not be able to meet its customers' delivery schedules and could face the loss of customers, or be exposed to liability to customers to which Phoenix promised delivery, which could adversely affect its business, prospects, financial condition and operating results.

If Phoenix fails to scale its business operations or otherwise manage future growth effectively as Phoenix attempts to rapidly grow its company, Phoenix may not be able to produce, market, service and sell its vehicles profitably or successfully.

Phoenix's future growth depends upon its ability to maintain relationships with its existing suppliers and source suppliers for its critical components, and to complete building out its supply chain, while effectively managing the risks due to such relationships.

Phoenix's success will be dependent upon its ability to maintain and expand its relationships with suppliers who are critical and necessary to the output and production of its vehicles. Phoenix also relies on a small group of suppliers to provide us with the components for its vehicles. The supply agreements Phoenix has or may enter into with key suppliers in the future may have provisions where such agreements can be terminated in various circumstances, including potentially without cause. If these suppliers become unable to provide, or experience delays in providing, components, or if the supply agreements Phoenix has in place are terminated, it may be difficult to find replacement components. Changes in business conditions, pandemics, governmental changes and other factors beyond its control or that Phoenix does not presently anticipate could affect its ability to receive components from its suppliers.

Further, Phoenix has not secured supply agreements for all of its components. In addition, there is the possibility that finalizing the supply agreements for the parts and components of its vehicles will cause significant disruption to its operations, or such supply agreements could be at costs that make it difficult for us to operate profitably.

If Phoenix does not enter into long-term supply agreements with guaranteed pricing for its parts or components, Phoenix may be exposed to fluctuations in prices of components, materials and equipment. Agreements for the purchase of battery cells typically contain pricing provisions that are subject to adjustment based on changes in market prices of key commodities. Substantial increases in the prices for such components, materials and equipment would increase its operating costs and could reduce its margins, if Phoenix cannot recoup the increased costs. Any attempts to increase the announced or expected prices of its vehicles in response to increased costs could be viewed negatively by its potential customers and could adversely affect its business, prospects, financial condition or operating results.

Phoenix may be unable to adequately control the costs or maintain adequate supply of components associated with its operations.

Phoenix may be unable to adequately control the costs associated with its operations. Phoenix expects to incur significant costs related to procuring raw materials required to manufacture and assemble its vehicles. The prices for these raw materials fluctuate depending on factors beyond its control. Its business also depends on the continued supply of battery packs for its vehicles. Phoenix is exposed to multiple risks relating to availability and pricing of quality lithium-ion battery packs.

Furthermore, currency fluctuations, tariffs or shortages in petroleum or other raw materials and other economic or political conditions may result in significant increases in freight charges and raw material costs. Substantial increases in the prices for its raw materials or components would increase its operating costs, and could reduce its margins. In addition, a growth in popularity of electric vehicles without a significant expansion in battery cell production capacity could result in shortages, which would result in increased costs in raw materials to us or impact its prospects.

Disruption of supply or shortage of raw materials could harm Phoenix's business.

Historically, Phoenix has experienced significant delivery delays and supply shortage with its BOM components, battery packs in particular. When encountered with supply disruption or shortage, its production plans and delivery schedules to its customers are to a large extent dictated by the timing of receiving these BOM components, or when a different supplier is fully qualified and customized into its product design. For example, COVID-19 has caused disruptions to and delays in its operations, including shortages and delays in the supply of certain parts, including batteries and chassis. Although Phoenix has worked diligently with its suppliers to mitigate the risks, Phoenix expects supply chain delays to continue to have a significant impact on its 2023 production and revenue and possibly thereafter. Any such supply interruption or shortage could materially adversely affect its business and operating results.

Phoenix EVs use lithium-ion batteries, which, if not appropriately managed and controlled, have caught fire or released smoke and flames. Such events could result in liability under Phoenix's warranties, for damage or injury, adverse publicity and a potential safety recall, any of which would hurt Phoenix's prospects.

The battery packs in Phoenix's EVs use lithium-ion cells, which, if not appropriately managed and controlled can rapidly release energy by venting smoke and flames that can ignite nearby materials. Highly publicized incidents of laptop computers and cell phones bursting into flames have focused attention on the safety of these cells. These events also have raised questions about the suitability of lithium-ion cells for automotive applications. There can be no assurance that a field failure of Phoenix's battery packs will not occur, which would damage the vehicle or lead to personal injury or death that subject Phoenix to lawsuits. Furthermore, there is some risk of electrocution if individuals who attempt to repair battery packs do not follow applicable maintenance and repair protocols. Any such damage or injury would likely lead to adverse publicity and potentially a safety recall. Any such adverse publicity could adversely affect Phoenix's business, prospects, financial condition and operating results.

If Phoenix's vehicles fail to perform as expected, its ability to develop, market and sell or lease its electric vehicles could be harmed.

If Phoenix's vehicles were to contain defects in design and/or manufacture that cause them not to perform as expected or that require repair, its ability to develop, market and sell or lease its vehicles could be harmed. For example, the operation of its vehicles is highly dependent on software that will require modification and updates over time. Software products are inherently complex and often contain defects and errors when first introduced. Phoenix currently has a limited frame of reference by which to evaluate the long-term quality, reliability and performance characteristics of its buses, trucks, and other products. There can be no assurance that Phoenix will be able to detect and repair any defects in its products before commencing the sale of its vehicles. Any product defects or any other failure of its vehicles to perform as expected could harm its reputation and result in adverse publicity, lost revenue, delivery delays, product recalls, product liability claims or significant warranty and other expenses, and could have a material adverse impact on its business, financial condition, operating results and prospects.

Phoenix is relying on third-party suppliers to develop a number of advanced technologies for use in its products.

There can be no assurances that its suppliers will be able to meet the technological requirements, production timing and volume requirements to support its business plan. In addition, the technology may not comply with the cost, performance useful life and warranty characteristics Phoenix anticipates in its business plan. As a result, its business plan could be significantly impacted and Phoenix may incur significant liabilities under warranty claims which could adversely affect its business, prospects and results of operations.

Phoenix is relying on a limited number of third-party suppliers to provide us with products for its charger and material handling division.

Currently Phoenix is dependent entirely on third-party suppliers and partners for its chargers and material handling product lines. If these suppliers are not able to provide us with products due to supply chain constraints or other reasons, Phoenix does not have the capability or knowledge to produce these products locally. This would result in delays in getting end products to customers and negatively impact its business and results of operations.

Phoenix's success may be dependent on its development and protection of intellectual property rights.

Phoenix relies on confidentiality and trade secret protections to protect its proprietary technology. All new EV drivetrain and technical developments by us will be owned by us. Its success will, in part, depend on its ability to obtain patents and trademarks and protect its trade secrets and proprietary technology. Phoenix is currently maintaining its engineering under confidentiality agreements and other agreements to preserve its trade secrets and other proprietary technology. Although Phoenix has entered into confidentiality agreements with its employees, consultants and contractors, its agreements may not adequately protect its intellectual property, particularly with respect to conflicts of ownership relating to work product generated by its employees, consultants and contractors, and Phoenix cannot be certain that others will not gain access to its trade secrets and other proprietary technology. Others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to its trade secrets.

Phoenix may not succeed in establishing, maintaining and strengthening its brand, which would materially and adversely affect customer acceptance of its vehicles and components and its business, revenues and prospects.

Phoenix's business and prospects heavily depend on its ability to develop, maintain and strengthen its brand. If Phoenix is not able to establish, maintain and strengthen its brand, Phoenix may lose the opportunity to build a larger base of customers. Its ability to develop, maintain and strengthen its brand will depend heavily on the success of its marketing efforts. The automobile industry is intensely competitive, and Phoenix may not be successful in building, maintaining and strengthening its brand. Its current and potential competitors, particularly automobile manufacturers headquartered in the United States, Japan, the European Union and China, have greater name recognition, broader customer relationships and substantially greater marketing resources than Phoenix does. If Phoenix does not develop and maintain a strong brand, its business, prospects, financial condition and operating results will be materially and adversely impacted.

Phoenix's electric vehicles will compete for market share with vehicles powered by other vehicle technologies that may prove to be more attractive than its vehicle technologies.

Phoenix's bus and light and medium-duty truck market currently is serviced by many manufacturers with existing customers and suppliers using proven and widely accepted fuel technologies. Additionally, its competitors are working on developing technologies that may be introduced in its target market. If any of these alternative technology vehicles can provide lower fuel costs, greater efficiencies, greater reliability or otherwise benefit from other factors resulting in an overall lower total cost of ownership, this may negatively affect the commercial success of its vehicles or make its vehicles uncompetitive.

Phoenix may be unable to keep up with changes in electric vehicle technology as new entrants and existing, larger manufacturers enter the electric vehicle space.

Phoenix's Zeus line of buses and trucks are designed for use with, and is dependent upon, existing electric vehicle technology. As new companies and larger, existing vehicle manufacturers enter the electric vehicle space, Phoenix may lose any technological advantage Phoenix may have had in the marketplace and suffer a decline in its position in the market. As technologies change, Phoenix plans to upgrade or adapt its products to continue to provide products with the latest technology. However, its products may become obsolete or its research and development efforts may not be sufficient to adapt to changes in or to create the necessary technology to effectively compete. As a result, its potential inability to adapt to and develop the necessary technology may harm its competitive position.

Phoenix's business requires highly technically skilled personnel, for whom Phoenix must compete for employment.

Phoenix's manufacturing and research and development require highly skilled electrical, mechanical, and software engineers. Competition for employment of such individuals is intense, and Phoenix's ability to attract and retain and retaining them is essential to continuing its business. Growth of Phoenix's business will depend upon its ability to compete for increasing numbers of such employees, and there can be no assurance that Phoenix will be able to do so. Its inability to attract and retain key personnel may materially and adversely affect its business operations. Any failure by its management to effectively anticipate, implement and manage the changes required to sustain its growth would have a material adverse effect on its business, financial condition and results of operations.

Phoenix will also need to hire and train a significant number of hourly employees to expand its commercial manufacturing operations. Furthermore, in the event employees hired by us seek to join or form a labor union, Phoenix could be subject to risks as Phoenix engages in an attempt to finalize negotiations with any such union, including potential work slowdowns or stoppages, delays and increased costs. If Phoenix is unsuccessful in hiring and training an expanded workforce in a timely and cost-effective manner, its business, financial condition and results of operations could be adversely affected.

Phoenix is highly dependent on the services of Liang Lance Zhou, its Chief Executive Officer.

Phoenix is highly dependent on the services of Liang Lance Zhou, its Chief Executive Officer. Mr. Zhou is the source of many, if not most, of the ideas and execution driving its strategies and supply chains. If Mr. Zhou were to discontinue his service to us due to death, disability or any other reason, Phoenix would be significantly disadvantaged.

Risks Related to Our Ordinary Shares

Our ordinary shares may be delisted under the Holding Foreign Companies Accountable Act ("HFCAA") if the PCAOB is unable to adequately inspect audit documentation located in China. The delisting of our ordinary shares or the threat of their being delisted, may have a material adverse impact on our listing and trading in the U.S. and the trading prices of our ordinary shares.

Pursuant to the Holding Foreign Companies Accountable Act (the "HFCA Act"), if the Public Company Accounting Oversight Board (the "PCAOB"), is unable to inspect an issuer's auditors for two consecutive years, the issuer's securities are prohibited to trade on a U.S. stock exchange. The PCAOB issued a Determination Report on December 16, 2021 (the "Determination Report") which found that the PCAOB is unable to inspect or investigate completely registered public accounting firms headquartered in: (1) mainland China of the People's Republic of China because of a position taken by one or more authorities in mainland China; and (2) Hong Kong, a Special Administrative Region and dependency of the PRC, because of a position taken by one or more authorities in Hong Kong. Furthermore, the Determination Report identified the specific registered public accounting firms which are subject to these determinations ("PCAOB Identified Firms").

The Company's current auditor, Marcum Asia CPAs LLP ("MarcumAsia"), the independent registered public accounting firm that issues the audit report included elsewhere in this annual report, as an auditor of companies that are traded publicly in the United States and a firm registered with the PCAOB, is subject to laws in the U.S. pursuant to which the PCAOB conducts regular inspections to assess its compliance with the applicable professional standards. MarcumAsia, whose audit report is included in this annual report, is headquartered in New York, New York, and, as of the date of this annual report, was not included in the list of PCAOB Identified Firms in the Determination Report.

On August 26, 2022, the PCAOB announced that it had signed a Statement of Protocol (the "Protocol") with the China Securities Regulatory Commission (the "CSRC") and the Ministry of Finance ("MOF") of the People's Republic of China, governing inspections and investigations of audit firms based in mainland China and Hong Kong. Pursuant to the Protocol, the PCAOB conducted inspections on select registered public accounting firms subject to the Determination Report in Hong Kong between September and November 2022.

On December 15, 2022, the PCAOB board announced that it has completed the inspections, determined that it had complete access to inspect or investigate completely registered public accounting firms headquartered in mainland China and Hong Kong, and voted to vacate the Determination Report.

Notwithstanding the foregoing, the Company's ability to retain an auditor subject to the PCAOB inspection and investigation, including but not limited to inspection of the audit working papers related to us, may depend on the relevant positions of U.S. and Chinese regulators. Marcum Asia CPAs LLP's audit working papers related to us are located in China. With respect to audits of companies with operations in China, there are uncertainties about the ability of its auditor to fully cooperate with a request by the PCAOB for audit working papers in China without the approval of Chinese authorities. If the PCAOB is unable to inspect or investigate completely the Company's auditor because of a position taken by an authority in a foreign jurisdiction, or the PCAOB re-evaluates its determination as a result of any obstruction with the implementation of the Statement of Protocol, then such lack of inspection or re-evaluation could cause trading in the Company's securities to be prohibited under the HFCA Act, and ultimately result in a determination by a securities exchange to delist the Company's securities. Accordingly, the HFCA Act calls for additional and more stringent criteria to be applied to emerging market companies upon assessing the qualification of their auditors, especially the non-U.S. auditors who are not inspected by the PCAOB.

On December 29, 2022, the Accelerating Holding Foreign Companies Accountable Act, or the AHFCA Act, was signed into law, which reduced the number of consecutive non-inspection years required for triggering the prohibitions under the HFCA Act from three years to two. As a result, the risks mentioned above have been heightened.

If our ordinary shares are subject to a trading prohibition under the HFCA Act or the AHFCA Act, the price of our ordinary shares may be adversely affected, and the threat of such a trading prohibition would also adversely affect their price. If we are unable to be listed on another securities exchange that provides sufficient liquidity, such a trading prohibition may substantially impair your ability to sell or purchase our ordinary shares when you wish to do so.

We have significant “equity overhang” which could adversely affect the market price of our Shares and impair our ability to raise additional capital through the sale of equity securities.

As of the date of this annual report, we had 30,292,960 ordinary shares outstanding, including 6,023,204, ordinary shares, or approximately 19.88% of our total ordinary shares outstanding, held by Mr. Xiaofeng Peng, our director, executive chairman of the board of directors and chief executive officer. The possibility that substantial amounts of our outstanding ordinary shares may be sold by Mr. Xiaofeng Peng or the perception that such sales could occur, or “equity overhang,” could adversely affect the market price of our ordinary shares, and could impair our ability to raise additional capital through the sale of equity securities in the future.

We are subject to litigation risks, including securities class actions and shareholder derivative actions, which may be costly to defend and the outcome of which is uncertain.

From time to time, we are subject to legal claims, with and without merit, that may be costly, and which may divert the attention of our management and our resources in general. In addition, our solar projects may be subject to litigation or other adverse proceedings that may adversely impact our ability to proceed with construction or grid connection or sell a given project, which would adversely affect our ability to recognize revenue with respect to such project. We are currently involved in various legal proceedings. See “[Item 1. Business](#) -Legal Proceedings.” The results of complex legal proceedings are difficult to predict. Lawsuits filed against us may assert types of claims that, if resolved against us, could give rise to substantial damages, and an unfavorable outcome or settlement of one or more of these lawsuits, or any future lawsuits, could have a material adverse effect on our business, financial condition, or results of operations. Even if these lawsuits are not resolved against us, the costs of defending such lawsuits may not be covered by our insurance policies. We cannot assure you that additional litigation will not be filed against us in the future.

It may be difficult to effect service of process on, or to enforce any judgments obtained against us, our directors, or our senior management members.

There is no statutory enforcement in the Cayman Islands of judgments obtained in the federal or state courts of the United States (and the Cayman Islands are not a party to any treaties for the reciprocal enforcement or recognition of such judgments). However, such a judgment will generally be recognized and enforced at common law by the courts of the Cayman Islands, without any re-examination or re-litigation of the merits of the case, by an action commenced on the foreign judgment debt, provided that: (a) the foreign court had jurisdiction over the parties to the dispute; (b) the judgment is for a liquidated sum; (c) the judgment is final, conclusive and not subject to appeal; (d) the judgment is not of a public, revenue or penal nature; (e) the judgment was not obtained by fraud or in proceedings contrary to natural justice; (f) the enforcement of the judgment would not be contrary to Cayman Islands public policy; (g) the judgment is not inconsistent with sections 91 or 92 of the Trusts Act (as revised) of the Cayman Islands; (h) the process by which the judgment is enforced is not barred under laws relating to the prescription and limitation of actions; and (i) the judgment is not inconsistent with a Cayman Islands judgment in respect of the same cause or point at issue between the same parties.

However, the Cayman Islands courts are unlikely to enforce a judgment obtained from the U.S. courts under civil liability provisions of the U.S. federal securities law if such judgment is determined by the courts of the Cayman Islands to give rise to obligations to make payments that are penal or punitive in nature. Because such a determination has not yet been made by a court of the Cayman Islands, it is uncertain whether such civil liability judgments from U.S. courts would be enforceable in the Cayman Islands.

Our shareholders may experience future dilution.

Our amended and restated memorandum and articles of association permits our board of directors, without shareholder approval, to authorize the issuance of preferred shares. The board of directors may classify or reclassify any preferred shares to set the preferences, rights and other terms of the classified or reclassified shares, including the issuance of preferred shares that have preference rights over our ordinary shares with respect to dividends, liquidation and voting rights. Furthermore, substantially all of our ordinary shares for which our outstanding stock options are exercisable are, once they have been purchased, eligible for immediate sale in the public market.

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. However, we cannot make these rights available in the United States unless we register the rights and the securities to which the rights relate under the Securities Act or an exemption from the registration requirements is available. We are under no obligation to file a registration statement with respect to any such rights or securities or to endeavor to cause a registration statement to be declared effective. Moreover, we may not be able to establish an exemption from registration under the Securities Act. Accordingly, you may be unable to participate in our rights offerings and may experience dilution in your holdings.

The issuance of additional shares in our capital or the exercise of stock options or warrants could be substantially dilutive to your shares and may negatively affect the market price of our ordinary shares.

The price of our securities has been and may continue to be highly volatile.

The price of our ordinary shares has been and may continue to be subject to wide fluctuations in the future in response to many events or factors, including those discussed in the preceding risk factors relating to our operations, as well as:

- actual or anticipated fluctuations in operating results, actual or anticipated gross profit as a percentage of net sales, our actual or anticipated rate of growth and our actual or anticipated earnings per share;
- changes in expectations as to future financial performance or changes in financial estimates;
- changes in governmental regulations or policies in the countries in which we do business;

- our, or a competitor's, announcement of new products, services or technological innovations;
- the operating and stock price performance of other comparable companies;
- news and commentary emanating from the media, securities analysts or government bodies relating to us and to the industry in general;

- changes in the general condition of the global economy and credit markets;
- general market conditions or other developments affecting us or our industry;
- announcements regarding patent litigation or the issuance of patents to us or our competitors;
- release or expiry of lock-up or other transfer restrictions on our outstanding ordinary shares;
- sales or perceived sales of additional ordinary shares; and
- commencement of, or our involvement in, litigation.

Any of these factors may result in large and sudden changes in the volume and price at which our ordinary shares will trade. We cannot give any assurance that these factors will not occur in the future again. In addition, the securities market has from time to time experienced significant price and volume fluctuations that are not related to the operating performance of particular companies. These market fluctuations may also have a material adverse effect on the market price of our ordinary shares. In the past, following periods of volatility in the market price of their stock, many companies have been the subject of securities class action litigation. If we become involved in similar securities class action litigation in the future, it could result in substantial costs and diversion of our management's attention and resources and could harm our stock price, business, prospects, financial condition and results of operations.

If we fail to meet the applicable listing requirements, NASDAQ may delist our ordinary shares from trading on its exchange in which case the liquidity and market price of our securities could decline and our ability to raise additional capital would be adversely affected.

Our ordinary shares are currently listed for trading on the NASDAQ Global Select Market. If we remain listed, there are a number of requirements that must be met in order for our ordinary shares to remain listed on the NASDAQ Global Select Market, and the failure to meet any of these listing standards could result in the delisting of our ordinary shares from NASDAQ. We cannot assure you that we will be able to timely file all required reports or comply with all other NASDAQ Listing Rules at all times in the future, or regain compliance in a timely manner in case of a default and avoid any subsequent adverse action taken by the Listing Qualifications Department, including but not limited to delisting.

Our articles of association contain anti-takeover provisions that could prevent a change in control even if such takeover is beneficial to our shareholders.

Our articles of association contain provisions that could delay, defer or prevent a change in control of us that could be beneficial to our shareholders. These provisions could also discourage proxy contests and make it more difficult for you and other shareholders to elect directors and take other corporate actions. As a result, these provisions could limit the price that investors are willing to pay for the ordinary shares. These provisions might also discourage a potential acquisition proposal or tender offer, even if the acquisition proposal or tender offer is at a price above the then current market price of our ordinary shares. These provisions provide that our board of directors has authority, without any further action by our shareholders, to issue preferred shares in one or more series and to fix their designations, powers, preferences, privileges, and relative participating, optional or special rights and the qualifications, limitations or restrictions, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights associated with the ordinary shares. The board of directors may decide to issue such preferred shares quickly with terms calculated to delay or prevent a change in control of us or make the removal of our management more difficult. If the board of directors decides to issue such preferred shares, the price of our ordinary shares may fall and the voting and other rights of holders of our ordinary shares may be materially adversely affected.

You may not receive dividends or other distributions on our ordinary shares and you may not receive any value for them, if it is illegal or impractical to make them available to you.

Under Cayman Islands law, we may only pay dividends out of our profits or share premium account subject to our ability to pay our debts as they fall due in the ordinary course of our business. Our ability to pay dividends may therefore depend on our ability to generate sufficient profits. We cannot give any assurance that we will declare dividends of any amounts, at any rate or at all in the future. We have not paid any dividends in the past. Future dividends, if any, will be paid at the discretion of our board of directors, subject to requirements under Cayman Islands law and our memorandum and articles of association, as amended and restated from time to time, and will depend upon our future operations and earnings, capital expenditure requirements, general financial conditions, legal and contractual restrictions and other factors that our board of directors may deem relevant.

We are treated as a U.S. corporation for U.S. federal tax purposes.

Due to the circumstances of our formation and the application of Section 7874(b) of the United States Internal Revenue Code of 1986, as amended (the "Code"), we are treated as a U.S. corporation for all purposes of the Code. As a result, we are subject to U.S. federal corporate income tax on our worldwide income. In addition, if we pay dividends to a Non-U.S. Holder, as defined in the discussion "Item 10. Additional Information-E. Taxation-U.S. Federal Income Taxation," U.S. income tax will be withheld at the rate of 30%, or, subject to certain conditions, such lower rate as may be provided in an applicable income tax treaty. Each investor should consult its own tax adviser regarding the U.S. federal income tax consequences of holding the ordinary shares in its particular circumstances.

Risks Related to Our International Operations

We are subject to risks associated with foreign currency exchange rates, fluctuations of which may negatively affect our revenue, cost of

goods sold and gross margins and could result in exchange losses.

We currently operate in a number of jurisdictions including the U.S., Japan, U.K., Greece, Italy, Australia and Canada, and our local operations are generally conducted in the functional currency of the home jurisdiction. The FIT and other subsidies granted are also denominated in local currencies. Thus, we deal on a regular basis in several currencies concurrently, which exposes us to significant currency exchange risks. Any increased costs or reduced revenue as a result of foreign exchange rate fluctuations could adversely affect our profit margins. The fluctuation of foreign exchange rates also affects the value of our monetary and other assets and liabilities denominated in local currencies. Generally, an appreciation of the U.S. dollar against the relevant local currencies could result in a foreign exchange loss for assets denominated in such local currencies and a foreign exchange gain for liabilities denominated in such local currencies. Conversely, a devaluation of the U.S. dollar against the relevant local currencies could result in a foreign exchange gain for assets denominated in such local currencies and a foreign exchange loss for liabilities denominated in such local currencies.

We may also expand into emerging markets, some of which may have an uncertain regulatory environment relating to currency policy. Conducting business in such emerging markets could increase our exposure to foreign exchange risks. Although we access a variety of financing solutions that are tailored to the geographic location of our projects and to local regulations, we have not entered into any hedging transactions to reduce the foreign exchange risks, but may do so in the future when appropriate. However, if we decide to hedge our foreign exchange exposure in the future, we cannot assure you that we will be able to reduce our foreign currency risk exposure in an effective manner, at reasonable costs, or at all.

General Risk Factors

Misconduct and errors by our employees could harm our business and reputation.

We are exposed to many types of operational risks, including the risk of misconduct, errors and fraud by our employees and key management personnel. Our training, resources, technologies and fraud detection tools may be insufficient to accurately detect and prevent fraud. Significant increases in fraudulent activity could negatively impact our brand and reputation, which could increase our costs and expenses. High profile fraudulent activity could even lead to regulatory intervention, and may divert our management's attention and cause us to incur additional expenses and costs. If any of the foregoing were to occur, our results of operations and financial condition could be materially and adversely affected.

Failure to manage our evolving business could have a material adverse effect on our business, prospects, financial condition and results of operations.

We intend to expand our business within our existing markets and in a number of selected new locations in the future. We also intend to expand our global project development business in the future. As our operations evolve, we expect to encounter additional challenges in our internal management, construction contracting management, investment and acquisition management, project management, project funding infrastructure and financing capabilities. Our existing operations, personnel, systems and internal control may not be adequate to support our business expansion and may require new investments in our internal management infrastructure. To manage the future growth of our operations, we will be required to improve our administrative, operational and financial systems, procedures and controls, and maintain, expand, train and manage a growing number of employees.

We may continue to conduct acquisitions and enter into joint ventures, investments or other strategic alliances which may be unsuccessful.

We may continue to grow our operations through acquisitions, as well as joint ventures or other strategic alliances when appropriate opportunities arise. Such acquisitions, joint ventures and strategic alliances may expose us to additional operational, regulatory, market and geographical risks as well as risks associated with additional capital requirements and diversion of management attention. In particular, any future strategic alliances may expose us to the following risks:

- There may be unforeseen risks relating to our counterparty's business and operations or liabilities that were not discovered by us through our legal and business due diligence prior to our investment. Such undetected risks and liabilities could have a material adverse effect on our reputation, business and results of operations in the future.
- We may not have experience acquiring, managing or investing in other companies. Business acquisitions may generally divert a significant portion of our management and financial resources from our existing business and the integration of the target's operations may pose significant business challenges, potentially straining our ability to finance and manage our existing operations.
- There is no assurance that the expected synergies from any business acquisition, joint venture or strategic alliances will materialize. If we are not successful in the integration of a target's operations, we may not be able to generate sufficient revenue from its operations to recover costs and expenses of the acquisition.
- Acquisition or participation in a new joint venture or strategic alliance may involve us in the management of operation in which we do not possess extensive expertise.

The materialization of any of these risks could have a material adverse effect on our business, financial condition and results of operations.

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

We rely primarily on trade secrets, know-how and other proprietary information to protect our intellectual property. Nevertheless, these afford only limited protection and the actions we take to protect our intellectual property rights may not be adequate to provide us with meaningful protection or commercial advantage. Third parties may be able to use the technologies that we have developed and compete with us, which could have a material adverse effect on our business, financial condition or results of operations. Our failure to protect our intellectual property and proprietary rights may undermine our competitive position. Third parties may infringe or misappropriate our proprietary technologies or other intellectual property and proprietary rights. Policing the unauthorized use of proprietary technology can be difficult and expensive. In particular, the laws and enforcement procedures certain markets where we operate are uncertain or do not protect intellectual property rights to the same extent as do the laws and enforcement procedures of the United States. We may need to resort to court proceedings to enforce our intellectual property rights in the future. Litigation relating to our intellectual property might result in substantial costs and diversion of resources and management attention away from our business. An adverse determination in any

such litigation will impair our intellectual property rights and adversely affect our business, prospects and reputation.

We may be exposed to infringement or misappropriation claims by third parties which, if determined adversely to us, could cause us to pay significant damage awards.

Our success depends largely on our ability to use and develop our technology and know-how without infringing the intellectual property rights of third parties. The validity and scope of claims relating to solar technology involve complex scientific, legal and factual questions and analysis and, therefore, may be highly uncertain. As we continue to expand internationally, we face a heightened risk of becoming the subject of claims for intellectual property infringement. We may be subject to litigation involving claims of patent infringement or violation of intellectual property rights of third parties. An adverse determination in any such litigation or proceedings against us could subject us to significant liabilities to third parties, including requiring us to seek licenses from third parties, to pay ongoing royalties or to pay monetary and punitive damages. Protracted litigation could also result in our customers or potential customers deferring or limiting their procurement of our PV solutions until resolution of such litigation, which could result in losses and adversely affect our reputation and results of operations.

The preparation of our consolidated financial statements in accordance with U.S. generally accepted accounting principles requires us to make estimates, judgments and assumptions that may ultimately prove to be incorrect.

The accounting estimates and judgments that management must make in the ordinary course of business affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the periods presented. If the underlying estimates are ultimately proven to be incorrect, subsequent adjustments could have a material adverse effect on our operating results for the period or periods in which the change is identified.

The COVID-19 pandemic, including its variants, has had and could continue to have an adverse impact on our business, operations, and the markets and communities in which we operate.

Our business and financial condition have been, and could continue to be, affected by the COVID-19 pandemic. The COVID-19 pandemic has had an unprecedented impact on the U.S. economy and has impacted our business. The effects of COVID-19, such as the widespread growth in infections, travel restrictions, quarantines, return-to-work restrictions, government regulations, supply chain disruptions, workforce shortages, and site closures have impacted and may continue to impact our ability to staff sales and operations centers and install and maintain solar energy systems in the field, as well as direct-to-home sales activities. The rise and resurgence of increasingly infectious variants, despite efforts to combat the virus with vaccinations, has presented additional challenges and unpredictability that have, and may continue to have, resulted in workforce constraints, delays, and additional costs, particularly in regions experiencing significant outbreaks.

The COVID-19 pandemic has also led to significant volatility in global financial markets, which could negatively affect our cost of and access to capital and could have an adverse impact on customer demand and the financial health and credit risk associated with our customers. Future disruptions or instability in capital markets could also negatively impact our ability to raise capital from third parties, such as tax equity partners, to grow our business. In addition, significant inflation, a recession, or a market correction resulting from the impacts of the COVID-19 pandemic has and could continue to adversely affect our business and the value of our common stock. The full economic impact of the pandemic is still not known.

COVID-19 has caused disruptions to the supply chain across the global economy, including within the solar industry. Certain suppliers have experienced, and may continue to experience, delays related to a variety of factors, including logistical delays, and component shortages from upstream vendors. We continue to monitor the situation and are working closely with our solar partners and suppliers to develop contingency plans for potential operations and supply chain interruptions.

The ultimate impact of the pandemic is highly uncertain, beyond our control, dependent on future developments that cannot be accurately predicted, and subject to change. We will continue to monitor developments affecting our workforce, our customers, and our business operations generally and will take additional actions that we determine are necessary in order to mitigate the impacts, however, any steps we take may be inadequate and, as a result, our business may be harmed.

Our business could be negatively impacted by cybersecurity threats, attacks and other disruptions.

We face advanced and persistent attacks on our information infrastructure where we manage and store various proprietary information and sensitive/confidential data relating to our operations. These attacks may include sophisticated malware (viruses, worms, and other malicious software programs) and phishing emails that attack our products or otherwise exploit any security vulnerabilities. These intrusions sometimes may be zero-day malware that are difficult to identify because they are not included in the signature set of commercially available antivirus scanning programs. Experienced computer programmers and hackers may be able to penetrate our network security and misappropriate or compromise our confidential information or that of our customers or other third-parties, create system disruptions, or cause shutdowns. Additionally, sophisticated software and applications that we produce or procure from third-parties may contain defects in design or manufacture, including "bugs" and other problems that could unexpectedly interfere with the operation of the information infrastructure. A disruption, infiltration or failure of our information infrastructure systems or any of our data centers as a result of software or hardware malfunctions, computer viruses, cyber-attacks, employee theft or misuse, power disruptions, natural disasters or accidents could cause breaches of data security, loss of critical data and performance delays, which in turn could adversely affect our business.

Security breaches of confidential customer information or confidential employee information may adversely affect our business.

Our business requires the collection, transmission and retention of customer and employee data, and other personally identifiable information, in various information technology systems that we maintain and in those maintained by third parties with whom we contract to provide services. The integrity and protection of that customer and employee data is critical to us. The information, security and privacy requirements imposed by governmental regulation are increasingly demanding. Our systems may not be able to satisfy these changing requirements and customer and employee expectations, or may require significant additional investments or time in order to do so. A breach in the security of our information technology systems or those of our service providers could lead to an interruption in the operation of our systems, resulting in operational inefficiencies and a loss of profits. Additionally, a significant theft, loss or misappropriation of, or access to, customers' or other proprietary data or other breach of our information technology systems could result in fines, legal claims or proceedings.

The costs of our operations may exceed our estimates due to factors outside of our control, such as labor shortages or external price increases, and we may be unable to pass those costs to our customers, which would negatively impact our financial results.

We depend on our employees and contracted grow operations teams to grow and distribute our products to our customers. We rely on access to competitive, local labor supply, including skilled and unskilled positions, to operate our business consistently and reliably. Any labor shortage, caused by the COVID-19 pandemic or other factors, and any disruption in our ability to hire workers would negatively affect our operations and financial condition. If we experience a sustained labor shortage, we may need to increase wages to attract workers, which would increase our costs of growing our products. Furthermore, if the prices of our raw materials, utilities or distributing our products were to increase, including due to inflationary pressures, we may be unable to pass those increased costs on to our customers. If we are unable to do so, our gross margin would decline, and our financial results would be negatively impacted.

Invasion of Ukraine could disrupt our delivery and operations, which could materially and adversely affect our business, financial condition, and results of operations.

On February 24, 2022, the Russian Federation launched an invasion of Ukraine that has had an immediate impact on the global economy resulting in higher energy prices and higher prices for certain raw materials and goods and services which in turn is contributing to higher inflation in the United States and other countries across the globe with significant disruption to financial markets. We do not have any operations or business in Russia or Ukraine, however, we may be potentially indirectly adversely impacted any significant disruption it has caused and may continue to escalate. In addition, the United States and other countries have imposed sanctions on Russia which increases the risk that Russia may resort to retaliatory actions, including the launching of cyberattacks. It is possible that these attacks could have collateral effects on additional critical infrastructure and financial institutions globally, which could adversely affect our operations. It is difficult to assess the likelihood of such threat and any potential impact at this time. Any one or more of these events may impede our operation and delivery efforts and adversely affect our sales results, or even for a prolonged period of time, which could materially and adversely affect our business, financial condition, and results of operations.

Volatility and increases in interest rates raise our cost of capital and may adversely impact our business.

While interest rates have been at long-term historic lows in recent years, they have recently increased, and may continue increasing in the near future. Rising interest rates, including recent historic increases starting in 2021 and continuing throughout 2022, have and may continue to result in a decrease in our advance rates, reducing the proceeds we receive from certain investment funds. Because our financing structure is sensitive to volatility in interest rates, higher rates increase our cost of capital and may decrease the amount of capital available to us to finance the deployment of new solar energy systems. Our future success depends on our ability to raise capital from fund investors and obtain secured lending to help finance the deployment of our solar service offerings. Part of our business strategy is to seek to reduce our cost of capital through these arrangements to improve our margins, offset reductions in government incentives and maintain the price competitiveness of our solar service offerings. Rising base interest rates or credit spreads, which have, and may continue to be worsened by inflation, an economic recession, or other variables, may have an adverse impact on our ability to offer attractive pricing on our solar service offerings to customers, which could negatively impact sales of our solar energy offerings, and our cash flows.

ITEM 1B. Unresolved Staff Comments

None.

ITEM 2. Properties

Our principal executive offices are located at its headquarters comprising approximately 196,000 square feet at 4803 Urbani Ave., McClellan Park, CA 95652.

ITEM 3. Legal Proceedings

Please see "[Item 1 - Business - Legal Proceedings](#)" For a discussion of the significant legal proceedings we are involved in.

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 ordinary shares have been traded on the NASDAQ Global Select Market under the Symbol "SPI" since September 19, 2017. Our ADSs, each representing ten ordinary shares, were listed on the NASDAQ Global Select market between January 19, 2016 and September 18, 2017 under the symbol "SPI".

Holders of Common Equity

As of April 14, 2023, there were 96 holders of record of our Ordinary Share. Such numbers do not include beneficial owners holding shares, rights or units through nominee names.

Dividends

We have never declared or paid dividends, nor do we have any present plan to pay any cash dividends on our ordinary shares in the foreseeable future. We currently intend to retain our available funds and any future earnings to operate and expand our business.

Subject to our memorandum and articles of association and certain restrictions under the Cayman Islands law, our board of directors has complete discretion on whether to pay dividends. In addition, our shareholders may by ordinary resolution declare a dividend, but no dividend may exceed the amount recommended by our directors. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that the

board of directors may deem relevant.

Equity Repurchases

During the fourth quarter of our fiscal year ended December 31, 2022, neither we nor any "affiliated purchaser" (as defined in Rule 10b-18(a)(3) under the Exchange Act) purchased any shares of our ordinary shares, the only class of our equity securities registered pursuant to Section 12 of the Exchange Act.

Recent Sales of Unregistered Securities

Any previous sales of unregistered securities by the Company have been previously disclosed in our reports on Form 8-K filed with the SEC.

ITEM 6. [Reserved]

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

You should read the following discussion and analysis in conjunction with our financial statements and the related notes appearing elsewhere in this annual report on Form 10-K. This discussion may contain forward-looking statements based on current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "[Item 1A.- Risk Factors](#)" or in other parts of this annual report on Form 10-K.

A. Operating Results

We are a global provider of photovoltaic (PV) and electric vehicle (EV) solutions for business, residential, government and utility customers and investors. We develop solar PV projects which are either sold to third party operators or owned and operated by us for selling of electricity to the grid in multiple countries in Asia, North America and Europe. In Australia, we primarily sell solar PV components to retail customers and solar project developers. We started to engage in sales and leasing of new zero-emission EVs in U.S. from 2020, engage in roofing and solar energy systems installation in U.S. from 2021 and also started to assemble solar modules for sale in U.S. in 2022.

Our liquidity position has deteriorated since 2015. We suffered net losses of \$44.8 million and \$33.7 million for the years ended December 31, 2021 and 2022, respectively. We also had an accumulated deficit of \$670.8 million and a working capital deficit of \$107.7 million as of December 31, 2022. For a detailed discussion, please see "[Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#) -B. Liquidity and Capital Resources-Capital Resources and Material Known Facts on Liquidity."

Our operating results for future periods are subject to numerous uncertainties and it is uncertain if we will be able to reduce or eliminate our net losses for the foreseeable future. We have developed a plan to continue implementing various measures to boost revenue and control the cost and expenses within an acceptable level. Such measures include: 1) negotiate with potential buyers on PV solar projects; 2) negotiate for postponing of convertible bond payments; 3) improve the profitability of the business in the United States ; 4) proactively implement a robust capital market strategy that includes both debt and equity offerings to meet the Group's financing needs; 5) strictly control and reduce business, marketing and advertising expenses and 6) seek for certain credit facilities.

If we fail to achieve these goals, we may need additional financing to repay debt obligations and execute our business plan, and we may not be able to obtain the necessary additional capital on a timely basis, on acceptable terms, or at all. In the event that financing sources are not available, or that we are unsuccessful in increasing our gross profit margin and reducing operating losses, we may be unable to implement our current plans for expansion, repay debt obligations or respond to competitive pressures, any of which would have a material adverse effect on our business, financial condition and results of operations and may materially adversely affect our ability to continue as a going concern.

Principal Factors Affecting Our Results of Operations

We believe that the following factors have had, and we expect that they will continue to have, a significant effect on the development of our business, financial condition and results of operations.

COVID-19

The continued effects of the COVID-19 pandemic and measures taken in response by governments and businesses worldwide to contain its spread have adversely impacted and may continue to adversely impact our supply chain, manufacturing, logistics, workforce and operations, as well as the operations of our suppliers, dealers and customers. There is continued uncertainty regarding the duration, scope and severity of the pandemic, particularly with the emergence of new variants of COVID-19 and periodic spikes in COVID-19 cases in various geographic regions, and the impacts on our business and the global economy from the effects of the pandemic and response measures.

Our operating results substantially depend on revenues derived from sales of PV project assets, provision of electricity, our Australian subsidiary's trading of PV components, and our U.S. subsidiary's business on roofing and solar energy systems installation, sales and leasing of EVs, sales of forklift and sales of solar modules, respectively. Travel and logistics restrictions, lockdowns, vaccine requirements and other measures from time to time implemented by foreign and domestic authorities have resulted in, and may continue to result in, supply chain and transportation disruptions, production delays and capacity limitations for the Company and some of our suppliers, dealers and customers, as well as reduced workforce availability or productivity, and additional data, information and cyber security risks associated with an extensive workforce working remotely.

The degree to which the pandemic ultimately impacts our business, financial condition and results of operations and the global economy will depend on future developments beyond our control, which are highly uncertain and difficult to predict, including the severity, duration and any resurgence of the pandemic, the extent, duration and effectiveness of periodic lockdowns and other containment actions, the availability, public adoption and efficacy of COVID-19 vaccines, how quickly and to what extent normal economic and operating activity can resume, and the severity and duration of resulting global economic volatility. We believe the most significant elements of uncertainty are the intensity and duration of the impact by our customers, partners, service providers or suppliers as well as the ability of our sales channels, supply chain, manufacturing, and distribution to continue to operate with minimal disruption, all of which could negatively impact our financial position, results of operations, cash flows and outlook.

Market Demand

Our revenue and profitability depend substantially on the demand for our PV solutions, which is driven by the economics of PV systems, including the availability and size of government subsidies and other incentives, government support, cost improvements in solar power, as well as environmental concerns and energy demand. The world PV market in terms of new annual installations is expected to grow significantly in the next five years, providing engineering procurement construction ("EPC") service providers and solar project developers like us with significant opportunities to grow our business.

In the long term, as PV technology advances and the average system costs of solar projects decrease, we expect the market for electricity in a growing number of countries to achieve grid parity. As the PV industry becomes more competitive against other energy industries and widespread grid parity strengthens demand for solar projects, we expect our costs of sales to decrease and our revenue and profitability to increase.

In addition, the medium-duty EV market is expected to grow significantly over the next decade and there are many key factors are shaping the industry for accelerated growth over the next few years. Key factors driving this growth include government regulations requiring fleets to go electric, incentives and grant funding supporting commercial zero emission vehicle deployments, infrastructure deployments and corporate electrification mandates. Many large fleets who operate large truck and bus fleets have committed to go 100% electric over the next few years. This includes large delivery truck fleets like Amazon, FedEx, UPS, DHL, IKEA; also shuttle bus operators like transit agencies in Los Angeles, Orange County, and New York; and large corporate fleet owners like Genentech, Microsoft and Salesforce. All of the above factors, together with key technology catalysts, are expected to spur demand for medium-duty electric vehicles significantly over the next few years. Key technology drivers include reduction in battery costs and costs of other key components, making electric vehicles cheaper, and advances in EV drivetrain technology, including motor improvements that enable better performance and higher efficiencies; and refinements in high-voltage battery technology. The anticipated sales growth in this segment of the EV market is attributed both to new companies that started as electric vehicle manufacturers, as well as and conventional OEMs who are expected to start offering complete EV over the next few years.

As PV and energy storage technology advances and the average system costs decrease, in many cases the residential or small business owners of solar systems have effectively achieved grid parity for their systems. Aided by smart meter and virtual power plant technologies such systems can be an attractive alternative to electricity grid in many localities. We expect traditionally strong residential solar markets such as California and Australia to continue to grow. We anticipate capturing scale economies as the overall solar power market grows, and expect our cost of sales to decrease and our revenue and profitability to increase.

Government Subsidies and Incentive Policies

We believe that the growth of the solar power industry in the short term will continue to depend largely on the availability and effectiveness of government incentives for solar power products and the competitiveness of solar power in relation to conventional and other renewable energy resources in terms of cost. Countries in Europe, notably Italy, Germany, France, Belgium and Spain, certain countries in Asia, including Japan, India and South Korea, as well as Australia and the United States have adopted favorable renewable energy policies. Examples of government sponsored financial incentives to promote solar power include capital cost rebates, tax credits, net metering and other incentives to end users, distributors, project developers, system integrators and manufacturers of solar power products.

Governments may reduce or eliminate existing incentive programs for political, financial or other reasons, which will be difficult for us to predict. Electric utility companies or generators of electricity from fossil fuels or other renewable energy sources could also lobby for a change in the relevant legislation in their markets to protect their revenue streams. Government economic incentives could be reduced or eliminated altogether.

With growing emphasis on improving air quality around our communities, large states like California are mandating key end user segments to switch to zero emission transportation options. Some of the key regulations driving growth in our addressable market include:

- requiring all transit buses in California to be zero emissions by 2040;
- requiring all airport shuttles in California to be all electric by 2035;
- requiring at least 50% of all medium-duty trucks sold in California to electric by 2030;
- requiring specific end user segments like drayage and yard trucks to go electric.

Other states like New York, New Jersey and Massachusetts are also expected to bring in regulatory requirements for key end user segments like, transit agencies and school buses to switch to all electric transportation options. Fifteen other states including Connecticut, Colorado, Hawaii, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington have committed to follow California's Advanced Clean Trucks Regulation. Primarily driven by the urgent need to meet carbon and greenhouse gas emission reduction targets, various state and federal agencies are also supporting the switch to zero emission transportation, providing a host of funding and incentive support to develop, demonstrate and deploy zero emission transportation solutions. Some of the key funding / incentives driving adoption of electric medium duty vehicles include:

- the California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, which offers a minimum of \$60,000 per vehicle as incentive for Class 4 electric vehicles registered and operating in the state;
- the New York Truck Voucher Incentive Program offering up to \$100,000 per Class 4 electric vehicle;
- funding from federal agencies like the Federal Transit Administration, covering up to 80% of the cost of procuring electric transit buses and various funding options covering up to 100% of the cost of procuring all electric school buses across key states.
- Federal and various state agencies have established incentives for setting up both public and private charging infrastructure. Notably, the California Energy Commission and the California Public Utilities Commission have approved funding up to 100% of the cost of setting up chargers and related infrastructure. Large utilities like Southern California Edison, Pacific Gas & Electric and San Diego Gas & Electric have 'Charge Ready' programs that cover the entire cost of setting up charging infrastructure. Other states like New York, Chicago, North Carolina, Tennessee, Texas and Ohio have also introduced programs to support fleets with their charging infrastructure requirements.

Our Solar Power Generation and Operations Capabilities

Our financial condition and results of operations depend on our ability to successfully continue to develop new solar projects and operate our existing solar projects. We expect to build and manage a greater number of solar projects, which we expect to present additional challenges to our

internal processes, external construction management, working capital management and financing capabilities. Our financial condition, results of operations and future success depend, to a significant extent, on our ability to continue to identify suitable sites, expand our pipeline of projects with attractive returns, obtain required regulatory approvals, arrange necessary financing, manage the construction of our solar projects on time and within budget, and successfully operate solar projects.

Selected Statement of Operations Items

Revenue

Our revenue for the years ended December 31, 2021 and 2022 was mainly derived from sales of PV components, roofing and solar energy systems installation, electricity revenue with Power Purchase Agreements ("PPAs"), sales of PV project assets, sales and leasing of EVs and others.

The following table sets forth a breakdown of our revenue from continuing operation by category of activities for the periods indicated:

	For the years ended December 31,		
	2021		2022
	(\$ in thousands except percentage)		
Sales of PV components	\$ 123,138	76.0%	\$ 133,930
Roofing and solar systems installation	29,028	17.9%	25,899
Electricity revenue with PPAs	4,587	2.8%	5,725
Revenue from sales and leasing of EV	2,336	1.4%	2,340
Others	2,904	1.9%	9,624
	<u>\$ 161,993</u>	<u>100.0%</u>	<u>\$ 177,518</u>
			<u>100.0%</u>

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Cost of Revenues

Our cost of revenues consist primarily of direct purchase price of PV components, raw materials and labor cost. In the years ended December 31, 2021 and 2022, we had cost of revenues of \$151.4 million and \$163.0 million from our operation, respectively.

Operating Expenses

In the years ended December 31, 2021 and 2022, our operating expenses consisted of (1) general and administrative expenses, (2) sales, marketing and customer service expenses, (3) provision for credit losses and (4) impairment charges.

General and administrative expenses. Our general and administrative expenses primarily consist of salaries and share-based compensation expense, professional service fees, rental and office supplies expenses. In the years ended December 31, 2021 and 2022, our general and administrative expenses were \$41.8 million and \$35.6 million, respectively.

Sales, marketing and customer service expenses. Our sales, marketing and customer service expenses consist primarily of advertising expense, amortization of intangible assets and salaries. In the years ended December 31, 2021 and 2022, our sales, marketing and customer service expenses were \$7.6 million and \$5.0 million, respectively.

Provision for credit loss. In the years ended December 31, 2021 and 2022, our provision for credit loss were of \$2.7 million and \$0.6 million, respectively.

Impairment charges. Our impairment charges consist of impairment charges for long-lived assets. In the years ended December 31, 2021 and 2022, our impairment charges were nil and \$2.0 million, respectively.

Other Income (Expense)

In the year ended December 31, 2021, our other income (expense) includes interest expenses, net, net foreign exchange gain, gain on forgiveness of PPP loan, change in fair value of derivative liability and others. In the year ended December 31, 2022, our other income (expense) includes interest expenses, net, loss on extinguishment of convertible bonds, change in fair value of derivative liability, net foreign exchange gain, gain on forgiveness of PPP loan and others.

Interest expense. Our interest expense arises from borrowings and amortization of debt discount of convertible bonds. In the years ended December 31, 2021 and 2022, our interest expense was \$5.1 million and \$7.2 million, respectively.

Income Tax

The following table sets forth our loss before income taxes to the relevant geographic locations for the periods indicated:

	For the year ended December 31,	
	2021 2022	
	(\$ in thousands except percentage)	
United States	\$ (45,860)	\$ (35,269)
Foreign	2,480	3,538
Total	<u>\$ (43,380)</u>	<u>\$ (31,731)</u>

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Cayman Islands

We are incorporated in the Cayman Islands. Under the current laws of the Cayman Islands, we are not subject to income or capital gains tax in the Cayman Islands. Payments of dividends and capital in respect of our Shares will not be subject to taxation in the Cayman Islands and no withholding will be required on the payment of a dividend or capital to any holder of our Shares, nor will gains derived from the disposal of our Shares be subject to

Cayman Islands income or corporation tax. The Cayman Islands currently have no income, corporation or capital gains tax and no estate duty, inheritance tax or gift tax.

United States

Based on Financial Accounting Standards Board ("FASB") staff Q&A Topic 740, No. 5, Accounting for Global Intangible Low-Taxed Income (GILTI), the FASB staff noted that the Company must make an accounting policy election to either (1) recognize taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method") or (2) factor such amount into the Company's measure of its deferred taxes (the "deferred method"). The Company elected to treat GILTI as a current-period expense when incurred. The Company has not recognized GILTI expense for the year ended December 31, 2022 as there were either no earnings from controlled foreign corporations or the "hightax" exclusion applied.

Hong Kong

According to Tax (Amendment) (No. 3) Ordinance 2018 published by Hong Kong government, from April 1, 2018, under the two-tiered profits tax rates regime, the profits tax rate for the first HKD2 million of assessable profits will be lowered to 8.25% (half of the rate specified in Schedule 8 to the Inland Revenue Ordinance (IRO)) for corporations. No provision for Hong Kong tax has been made in our consolidated financial statements, as our Hong Kong subsidiary had not generated any assessable income for the years ended December 31, 2021 and 2022. Our subsidiaries incorporated in Hong Kong were exempted from the Hong Kong income tax on its foreign-derived income and there were no withholding taxes in Hong Kong on the remittance of dividends.

See "[Item 1. Business](#) - Taxation" for more information.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America, which require us to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements, the reported amounts of revenues and expenses during the reporting periods and the related disclosures in the consolidated financial statements and accompanying footnotes. Out of our significant accounting policies, which are described in Note 3-Summary of Significant Accounting Policies of our consolidated financial statements included elsewhere in this Form 10-K, certain accounting policies are deemed "critical," as they require management's highest degree of judgment, estimates and assumptions. While management believes its judgments, estimates and assumptions are reasonable, they are based on information presently available and actual results may differ significantly from those estimates under different assumptions and conditions.

Revenue Recognition

Our accounting practices under Accounting Standards Codification ("ASC") No. 606, "Revenue from Contracts with Customers" ("ASC 606" or "Topic 606") are as follows:

We generate revenue from sales of PV components, roofing and solar systems installation, electricity revenue with Power Purchase Agreements ("PPAs"), sales of PV project assets, sales and leasing of EVs and others.

Sale of PV components. Revenue on sale of PV components includes one performance obligation of delivering the products and the revenue is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon shipment or acceptance of the customer depending on the terms of the underlying contracts.

Roofing and solar systems installation. Revenue from roofing and solar energy system installation is recognized over time. For revenue from solar energy system installation, our only performance obligation is to design and install a customized solar energy system, or to reinstall the customer's existing solar energy system. For revenue from roofing, our only performance obligation is to design and build the roof system per customer specifications. Our roofing projects involve the construction of a specific roof systems in accordance with each customer's selection; our solar energy system installations involve solar modules being retrofitted to existing consumer roofs using rails, then connected to the utility using an inverter system. For both solar energy system installation and roofing, typically jobs are completed within three months, the specific timing depends on the size of the job and the complexity of the job site, and the contract price includes all material and labor needed, and payments are collected based on specific milestones.

We provide solar energy systems and roofing installation for various customers, such as homeowners and real estate developers, but the design and installation for each customer differs substantially on the basis of each customer's needs and the type of shingle or roof that is placed with the solar energy system. The asset consequently has no alternative use to us because the customer specific design limits our practical ability to readily direct the solar energy system to another customer. As such our performance does not create an asset with an alternative use to us. Pursuant to the contract, the customers agree to pay for any costs, expenses and losses incurred by us upon termination, and therefore, revenue is recognized over time according to ASC 606-10-25-27(c).

For both solar energy system installation and roofing, all costs to obtain and fulfill contracts associated with system sales and other product sales are expensed to cost of revenue when the corresponding revenue is recognized.

The Group recognizes revenue using a cost-based input method that recognizes revenue and gross profit as work is performed based on the relationship between actual costs incurred compared to the total estimated cost of the contract, to determine our progress towards contract completion and to calculate the corresponding amount of revenue and gross profit to recognize. The total estimated cost of the contract constitutes of material cost and labor cost, and are developed based on the size and specific situation of different jobs. Changes in estimates mainly due to: (i) unforeseen field conditions that impacts the estimated workload, and (ii) change of the unit price of material or labor cost.

If the estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known.

Electricity revenue with PPAs. We sell energy generated by PV solar power systems under PPAs. For energy sold under PPAs, we recognize revenue each period based on the volume of energy delivered to the customer (i.e., the PPAs off-taker) and the price stated in the PPAs. We have determined that none of the PPAs contains a lease since (i) the purchaser does not have the rights to operate the PV solar power systems, (ii) the purchaser does not have the rights to control physical access to the PV solar power systems, and (iii) the price that the purchaser pays is at a fixed price per unit of output.

Sale of PV project asset. Our sales arrangements for PV projects do not contain any forms of continuing involvement that may affect the revenue or profit recognition of the transactions, nor any variable considerations for energy performance guarantees, minimum electricity end subscription commitments. The Company therefore determined its single performance obligation to the customer is the sale of a completed solar project. We recognize revenue for sales of solar projects at a point in time after the solar project has been grid connected and the customer obtains control of the solar project.

Revenue from sales and leasing of EV. We recognize revenue from sales of EV at a point in time following the transfer of control of such products to the customer, which typically occurs upon the delivery to the customer for EV sales. We determined that the government grants related to sales of EV should be considered as part of the transaction price because it is granted to the EV buyer and the buyer remains liable for such amount in the event the grants were not received by us or returned due to the buyer violates the government grant terms and conditions. EV leasing revenue includes revenue recognized under lease accounting guidance for direct leasing programs. We account for these leasing transactions as operating leases under ASC 842 Leases, and revenues are recognized on a straight-line basis over the contractual term.

Other revenue. Other revenue mainly consist of sales of self-assembled solar modules, sales of component and charging stations, sales of forklifts, engineering and maintenance service, shipping and delivery service, sales of pre-development solar projects and others. Other revenues are recognized at a point in time following the transfer of control of such service or products to the customer, which typically occurs upon shipment of product or acceptance of the customer depending on the terms of the underlying contracts.

Impairment of Long-lived Assets

Our long-lived assets include property, plant and equipment, project assets, right-of-use assets and other intangible assets with finite lives. We evaluate long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group be tested for possible impairment, we first compare undiscounted cash flows expected to be generated by that asset or asset group from its use and eventual disposition to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. Fair value is determined through various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary. Any impairment write-downs would be treated as permanent reductions in the carrying amounts of the assets and a charge to statement of operations would be recognized.

We review project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. We consider a project commercially viable or recoverable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed. We consider a partially developed or partially constructed project commercially viable or recoverable if the anticipated selling price is higher than the carrying value of the related project assets. We examine a number of factors to determine if the project is expected to be recoverable, including whether there are any changes in environmental, permitting, market pricing, regulatory, or other conditions that may impact the project. Such changes could cause the costs of the project to increase or the selling price of the project to decrease. If a project is not considered recoverable, we impair the respective project assets and adjust the carrying value to the estimated fair value.

The judgments and estimates involved in identifying and quantifying the impairment of long-lived assets involve inherent uncertainties, and the measurement of the fair value is dependent on the accuracy of the assumptions used in making the estimates and how those estimates compare to our future operating performance. We evaluate long-lived assets for impairment and record an impairment charge of \$2.0 million, for impairment of project assets and right of use assets for the year ended December 31, 2022. For the year ended December 31, 2021, there were no impairment charges recorded related to long-lived assets.

Inventories

Inventories are stated at the lower of cost or net realizable value. The cost of raw materials is determined on the basis of weighted average cost method. The cost of finished goods is determined on the basis of weighted average and comprises direct materials, direct labor and an appropriate proportion of overhead. Net realizable value is based on estimated selling prices less selling expenses and any further costs expected to be incurred for completion. Adjustments to reduce the cost of inventory to net realizable value are made, if required, for estimated excess, obsolescence, or impaired balances if any. We evaluate the recoverability of our inventories based on assumptions about expected demand and market conditions. Our assumption of expected demand is developed based on our analysis of sales backlog, market forecast, and competitive intelligence. Our assumption of expected demand is compared to available inventory, production capacity, available third-party inventory, and growth plans.

During the years ended December 31, 2021 and 2022, inventories were written down by \$1.0 million and \$0.1 million, respectively, to reflect the lower of cost or net realizable value.

Share-Based Compensation

Our share-based payment transactions with employees, such as restricted shares and share options, are measured based on the grant-date fair value of the equity instrument granted. The fair value of the award is recognized as compensation expense, net of estimated forfeitures, over the period during which an employee is required to provide service in exchange for the award on a straight line basis, which is generally the vesting period. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

We estimate the fair value of service-based stock options granted using the Black-Scholes option-pricing formula, which requires the use of highly subjective and complex assumptions. If we had made different assumptions, our stock-based compensation expense, net loss and net loss per share of common stock could have been significantly different. See Note 19 to our audited financial statements included elsewhere in this Annual Report for information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted during the years ended December 31, 2021 and 2022.

Accounts Receivables and Allowance for Credit Losses

We grant open credit terms to credit-worthy customers. Accounts receivable are primarily related to the Group's sales of PV components, revenue from roofing and solar energy systems installation, electricity revenue with PPA, sales of solar modules and sales of EVs and forklifts.

We maintain allowances for credit losses for estimated losses resulting from the inability of our customers to make required payments. Accounts receivable is considered past due based on its contractual terms. In establishing the allowance, management considers historical losses, the financial condition, the accounts receivables aging, the payment patterns and the forecasted information in pooling basis upon the use of the Current Expected Credit Loss Model ("CECL Model") in accordance with ASC topic 326, Financial Instruments - Credit Losses. Accounts receivable that are deemed to be uncollectible are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. There is a time lag between when the Company estimates a portion of or the entire account balances to be uncollectible and when a write off of the account balances is taken. We do not have any off-balance-sheet credit exposure related to our customers. Contractually, we may charge interest for extended payment terms and require collateral.

Provision for credit losses is \$2.7 million for the year ended December 31, 2021 and reversal of credit loss is \$1.0 million for the year ended December 31, 2022.

Goodwill

Goodwill represents the excess of the purchase consideration over the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed of the acquired entity as a result of our acquisitions of interests in our subsidiaries. Goodwill is not amortized but is tested for impairment on an annual basis, or more frequently if events or changes in circumstances indicate that it might be impaired. We have an option to first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. In the qualitative assessment, we consider primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. Based on the qualitative assessment, if it is more likely than not that the fair value of each reporting unit is less than the carrying amount, the quantitative impairment test is performed.

In performing the quantitative impairment test, we compare the fair values of each reporting unit to its carrying amount, including goodwill. If the fair value of each reporting unit exceeds its carrying amount, goodwill is not considered to be impaired. If the carrying amount of a reporting unit exceeds its fair value, we recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. Application of a goodwill impairment test requires significant management judgment, including the identification of reporting units, assigning assets, liabilities and goodwill to reporting units, and determining the fair value of each reporting unit. The judgment in estimating the fair value of reporting units includes estimating future cash flows, determining appropriate discount rates and making other assumptions. Changes in these estimates and assumptions could materially affect the determination of fair value for each reporting unit.

We tested goodwill for impairment as of December 31, 2021 and 2022 by performing a qualitative assessment test and no impairment indicator was noted.

Derivative Instruments

We evaluate our convertible debt to determine if the contract or embedded component of the contract qualifies as derivatives to be separately accounted for in accordance with ASC 480, "Distinguish by Liabilities from Equity", and ASC 815, "Derivatives and Hedging". The result of this accounting treatment is that the fair value of the embedded derivative, if required to be bifurcated, is marked-to-market at each balance sheet date and recorded as a liability. The change in fair value is recorded in the consolidated statement of operations. Upon conversion or exercise of a derivative instrument, the instrument is marked to fair value at the conversion date and then that fair value is reclassified to equity.

Derivative liability as of December 31, 2021 and 2022 is nil and \$3.4 million, respectively, with the change in fair value of \$67 thousands and negative \$0.2 million recorded in the consolidated statements of operations for the years ended December 31, 2021 and 2022, respectively.

Income Taxes

We account for income taxes under the asset and liability method. 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 that includes the enactment date. A valuation allowance is recognized if it is more likely than not that some portion, or all, of a deferred tax asset will not be realized.

We recognize in the consolidated financial statements the impact of a tax position, if that position is more likely than not of being sustained upon examination, based on the technical merits of the position. In evaluating whether a tax position has met the more-likely-than-not recognition threshold, management presumes that the position will be examined by the appropriate taxing authority that has full knowledge of all relevant information. In addition, a tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to be recognized in the financial statements. The tax position is measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon settlement. Our tax liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of the tax audits, case law developments and new or emerging legislation. Such adjustments are recognized entirely in the period in which they are identified. We record interest and penalties related to an uncertain tax position, if and when required, as part of income tax expense in the consolidated statements of operations. No reserve for uncertain tax positions was recorded for the years ended December 31, 2022 and 2021. We do not expect that the assessment regarding unrecognized tax positions will materially change over the next 12 months. We are not currently under examination by an income tax authority, nor have been notified that an examination is contemplated.

Recent Accounting Pronouncements

Recently Adopted Accounting Standards

See Note 3 "Summary of Significant Accounting Policies" to our consolidated financial statements for a description of recently issued or adopted accounting pronouncements that may potentially impact our financial position, results of operations or cash flows.

Recent Financing Activities

In February 2021, the Company offered and sold 1,365,375 ordinary shares in a registered direct offering to certain institutional investors at a purchase price of \$10.79 per ordinary share for \$13.6 million, net of direct offering cost of \$1.1 million.

In February 2021, June 2021, September 2021, November 2021, the Company sold Convertible Promissory Notes to an investor for consideration of approximately \$4.21 million each and \$16.84 million in total, convertible into ordinary shares of the Company at a conversion price of \$20.00 per share. The Convertible Promissory Notes were offered and sold solely to the investor in a private placement in reliance on Regulation D promulgated under the U.S. Securities Act of 1933, as amended.

In June 2022, Phoenix Motor Inc. ("Phoenix"), the parent company of Phoenix Cars LLC and Phoenix Motorcars Leasing LLC, completed its initial public offering ("IPO") and Phoenix's shares have been listed on NASDAQ under the stock code "PEV" ("Phoenix IPO"). Phoenix issued 2,100,000 ordinary shares at \$7.5 per share. Net proceeds from the Phoenix IPO after deducting underwriting commissions, share issuance costs and offering expenses amounted to \$13.4 million.

In April 2022, the Company sold Convertible Promissory Notes to an investor for consideration of approximately \$2.1 million convertible into ordinary shares of the Company at a conversion price of \$20.00 per share. The Convertible Promissory Notes were offered and sold solely to the investor in a private placement in reliance on Regulation D promulgated under the U.S. Securities Act of 1933, as amended.

In November 2022, Phoenix entered into a standby equity purchase agreement with YA II PN, LTD., a Cayman Islands exempt limited partnership (the "Investor") to sell up to \$10 million of Phoenix's share of common stock from time to time. The selling price is 93% of the market price as defined in the agreement. Net proceeds from standby equity purchase agreement in 2022 amounted to \$0.03 million.

In December 2022, the Company issued 1,150,000 ordinary shares in a private placement for net proceeds of \$1.2 million, after deducting offering cost, at a price of \$1.01 per ordinary share.

Results of Operations

The following table sets forth a summary, for the periods indicated, of our consolidated results of operations and each item expressed as a percentage of our total net revenues. Our historical results presented below are not necessarily indicative of the results that may be expected for any future period.

	December 31,				
	2021		2022		
	(\$ in thousands except percentage)				
Net revenues	\$ 161,993	100.0 %	\$ 177,518	100.0 %	
Cost of revenues	151,373	93.4 %	163,033	91.8 %	
Gross profit	10,620	6.6 %	14,485	8.2 %	
Operating expenses:					
General and administrative	41,780	25.8 %	35,554	20.0 %	
Sales, marketing and customer service	7,581	4.7 %	5,027	2.8 %	
Provision for credit losses	2,735	1.7 %	581	0.3 %	
Impairment charges on long-lived assets	—	—	1,955	1.1 %	
Total operating expenses	52,096	32.2 %	43,117	24.2 %	
Operating (loss) income	(41,476)	(25.6)%	(28,632)	(16.1)%	
Other income (expense):					
Interest expenses, net	(5,137)	(3.2)%	(7,194)	(4.1)%	
Loss on extinguishment of convertible bonds			(2,634)	(1.5)%	
Change in fair value of derivative liability	67	0.0 %	(183)	(0.1)%	
Net foreign exchange gain	2,694	1.7%	2,564	1.4 %	
Forgiveness of PPP Loan	205	0.1%	5,095	2.9 %	
Others	267	0.2%	(747)	(0.5)%	
Total other expense, net	(1,904)	(1.2)%	(3,099)	(1.9)%	
Loss before income taxes	(43,380)	(26.8)%	(31,731)	(17.9)%	
Income taxes expense	1,454	0.9 %	1,992	1.1 %	
Net loss	\$ (44,834)	(27.7)%	\$ (33,723)	(19.0)%	

Comparison of the year ended December 31, 2022 to the year ended December 31, 2021

Net revenues — Net revenues were \$162.0 million and \$177.5 million for the years ended December 31, 2021 and 2022, respectively, representing an increase of \$15.5 million or 9.6%. The increase in net sales for the year ended December 31, 2022 over the comparative period was primarily due to revenue increase from sales of PV components of \$10.8 million, Electricity revenue increase with PPAs of \$1.1 million and revenue increase from sales of self-assembled solar modules, sales of component and charging stations, sales of forklifts and others of \$6.7 million, partially net off by the decrease of revenue from roofing and solar systems installation of \$3.1 million.

Cost of revenues — Cost of revenues was \$151.4 million (93.4% of net revenues) and \$163.0 million (91.8% of net revenues) for the years ended December 31, 2021 and 2022, respectively, representing an increase of \$11.7 million or 7.7%. The increase in cost of goods sold was in consistent with the increase of net revenues.

Gross profit — Our gross profit increased from \$10.6 million in the year ended December 31, 2021 to \$14.5 million in the year ended December 31, 2022. Gross margins were 6.6% and 8.2% for the years ended December 31, 2021 and 2022, respectively. The increase in gross margin was primarily due to we focused more on sales of battery and inverter instead of sales of panel in the year ended December 31, 2022, where battery and inverter products have a higher GP ratio than panels.

General and administrative expenses — General and administrative expenses were \$41.8 million (25.8% of net revenues) and \$35.6 million (20.0% of net revenues) for the years ended December 31, 2021 and 2022, respectively, representing a decrease of \$6.2 million, or 14.9%. The decrease was mainly due to the decrease in stock-based compensation expense and research and development expenses.

Sales, marketing and customer service expenses — Sales, marketing and customer service expenses were \$7.6 million (4.7% of net revenues) and \$5.0 million (2.8% of net revenues) for the years ended December 31, 2021 and 2022, respectively, representing a decrease of \$2.6 million, or 33.7%. The decrease was mainly due to the decrease of the amortization of customer list and work in process contracts purchased from the PDI acquisition in the year of 2021.

Provision for credit loss — In 2021 and 2022, we accrued credit loss provision of \$2.7 million (1.7% of net revenues) and \$0.6 million (0.3% of net revenues), respectively. The decrease was mainly due to the reversal of provision for the accounts receivable generated from the business of roofing and solar energy systems installation in 2022.

Impairment charges on long-lived assets — We accrued nil and \$2.0 million impairment loss (1.1% of net revenues) for the years ended December 31, 2021 and 2022, respectively. The increase was due to impairment of our right-of-use assets in our renewable energy solutions segment and project assets in our solar projects development segment.

Interest expense, net — Interest expense net was \$5.1 million (3.2% of net revenues) and \$7.2 million (4.1% of net revenues) for the years ended December 31, 2021 and 2022, respectively, representing an increase of \$2.1 million, or 40.0%. The increase in interest expense was primarily due to amortization of debt discount of convertible bonds and interest accrued from new convertible bonds.

Loss on extinguishment of convertible bonds — We recorded nil and \$2.6 million impairment loss (1.5% of net revenues) for the year ended December 31, 2021 and 2022, respectively. The loss came from the extinguishment of the convertible bonds during the current year.

Net foreign exchange gain — We had a net foreign exchange loss of \$2.7 million (1.7% of net revenues) and a net foreign exchange gain of \$2.6 million (1.4% of net revenues) for the years ended December 31, 2021 and 2022, respectively. The variance is mainly due the fluctuation of exchange rate for EUR/USD and AUD/USD.

Forgiveness of PPP Loan — We generated Forgiveness of PPP Loan of \$0.2 million (0.1% of net revenues) and \$5.1 million (2.9% of net revenues) for the years ended December 31, 2021 and 2022.

Income tax expense — We had a provision for income taxes of \$1.5 million (0.9% of net revenues) and \$2.0 million (1.1% of net revenues) for the years ended December 31, 2021 and 2022, respectively, representing an increase of \$0.5 million, or 37.0%. The increase was mainly due to the increase in profit before tax of our subsidiary in Australia.

Net loss — For the foregoing reasons, we incurred a net loss of \$33.7 million (19.0% of net revenues) for the year ended December 31, 2022, representing a decrease of net loss of \$11.1 million compared to a net loss of \$44.8 million (24.8% of net revenues) for the year ended December 31, 2021.

B. Liquidity and Capital Resources

Liquidity and Capital Resources

Historically, we have financed our operations primarily through cash flows from bank borrowings, financing from issuance of convertible bonds, operating activities, and the proceeds from private placements and registered offerings.

As of December 31, 2022, we had \$11.0 million in cash and cash equivalents, and restricted cash.

We have recurring losses from operations. We have incurred a net loss of \$33.7 million during the year ended December 31, 2022. As of December 31, 2022, we had a working capital deficit of \$107.7 million and the cash flow used in the operation activities for the year ended December 31, 2022 was \$16.0 million. These conditions raise substantial doubt about the Company's ability to continue as a going concern.

For the next 12 months from the issuance date of this report, we plan to continue implementing various measures to boost revenue and control the cost and expenses within an acceptable level. Such measures include: 1) negotiate with potential buyers on PV solar projects; 2) negotiate for postponing of convertible bond payments; 3) improve the profitability of the business in the United States; 4) proactively implement a robust capital market strategy that includes both debt and equity offerings to meet the Group's financing needs; 5) strictly control and reduce business, marketing and advertising expenses and 6) seek for certain credit facilities.

If we fail to achieve these goals, we may need additional financing to repay debt obligations and execute our business plan, and we may not be able to obtain the necessary additional capital on a timely basis, on acceptable terms, or at all. In the event that financing sources are not available, or that we are unsuccessful in increasing our gross profit margin and reducing operating losses, we may be unable to implement our current plans for expansion, repay debt obligations or respond to competitive pressures, any of which would have a material adverse effect on our business, financial condition and results of operations and may materially adversely affect our ability to continue as a going concern.

The consolidated financial statements do not include any adjustments related to the recoverability and classification of recorded assets or the amounts and classification of liabilities or any other adjustments that might be necessary should we be unable to continue as a going concern.

A summary of the sources and uses of cash and cash equivalents is as follows:

	For the year ended December 31,	
	2021 (\$ in thousands)	2022 (\$ in thousands)
Net cash used in operating activities	\$ (27,484)	\$ (15,966)
Net cash (used in) generated from investing activities	(8,866)	(8,157)
Net cash generated from financing activities	18,425	17,304
Effect of exchange rate changes on cash	(4,012)	(39)

Net decrease in cash, cash equivalents and restricted cash	\$ (21,937)	\$ (6,858)
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Operating Activities

Net cash used in operating activities was \$16.0 million for the year ended December 31, 2022, primarily as a result of (i) net loss of \$33.7 million, (ii) Gain on forgiveness of PPP loan of \$5.1 million, (iii) increase in project assets of \$1.8 million, (iv) increase in inventories of \$6.8 million, (v) decrease in lease liability of \$2.4 million; and was partially offset by (i) increase in accounts payable of \$5.7 million, (ii) increase in advance from customers of \$4.2 million, (iii) increase in accrued liabilities and other liabilities of \$4.6 million, (iv) increase in income taxes payable of \$1.8 million and noncash adjustments mainly including (v) depreciation and amortization of \$4.2 million, (vi) stock-based compensation expenses of \$3.1 million, (vii) loss on extinguishment of convertible bonds of \$2.6 million, (viii) impairment charges on long lived assets of \$2.0 million, (ix) provision for prepaid and other current assets of \$1.6 million, (x) amortization of right-of-use assets of \$2.6 million, (xi) amortization of debt discount on convertible bond of \$1.4 million.

Net cash used in operating activities was \$27.5 million for the year ended December 31, 2021, primarily as a result of (i) net loss of \$44.8 million, (ii) increase in project assets of \$6.0 million, (iii) increase in inventories of \$7.1 million, and (iv) increase in prepaid expenses and other assets of \$4.6 million; the decrease was partially offset by (i) increase in accounts payable of \$8.5 million, (ii) increase in advance from customers of \$3.6 million, (iii) increase in accrued liabilities and other liabilities of \$4.0 million, and noncash adjustments mainly including (iv) depreciation and amortization of \$7.3 million, (v) Provision for credit loss of \$2.7 million, (vi) stock-based compensation expenses of \$5.8 million.

Investing Activities

Net cash used in investing activities was \$8.2 million for the year ended December 31, 2022, primarily as a result of the cash paid for purchase of property, plant and equipment of \$8.3 million.

Net cash used in investing activities was \$8.9 million for the year ended December 31, 2021, primarily as a result of the cash paid for asset purchase of PDI in the amount of \$8.0 million and purchase of property, plant and equipment of \$1.3 million, partially offset by proceeds from disposal of property and equipment of \$0.5 million.

Financing Activities

Net cash generated from financing activities was \$17.3 million for the year ended December 31, 2022, primarily consisted of (i) proceeds from issuance of common stocks in private placement of \$1.2 million, (ii) proceeds from IPO of Phoenix of \$13.4 million, (iii) proceeds from borrowings of \$141.6 million, partially offset by repayment of convertible notes of \$141.0 million, and (iv) proceeds from issuance of convertible bond of \$2.0 million.

Net cash generated from financing activities was \$18.4 million for the year ended December 31, 2021, primarily consisted of (i) proceeds from issuance of ordinary shares of \$13.6 million, (ii) proceeds from issuance of convertible note of \$16.0 million, (iii) net proceeds from line of credit and loans payable of \$1.6 million and (iv) proceeds from exercise of options issued to Lighting Charm Limited during disposition of SPI China of \$1.1 million, partially offset by repayment of convertible notes of \$13.9 million.

Capital Expenditures

We incurred capital expenditures of \$9.3 million and \$8.3 million in 2021 and 2022, respectively. There are no capital commitments as of December 31, 2022.

Trend information

Our operating results substantially depend on revenues derived from sales of PV project assets, provision of electricity, our Australian subsidiary's trading of PV components, and our U.S. subsidiary's business on roofing and solar energy systems installation, sales and leasing of EVs, sales of forklift and sales of solar modules, respectively. The COVID 19 pandemic has created and continues to create various global macroeconomic, customer demand, operational and supply chain risks, any one of which could have an adverse impact on our business going forward.

Other than as disclosed elsewhere in this prospectus, the following trends, uncertainties, demands, commitments or events for 2022 are reasonably likely to have a material effect on our net revenues, income, profitability, liquidity or capital resources, or that would cause reported consolidated financial information not necessarily to be indicative of future operating results or financial conditions:

- Inflation Reduction Act. The Inflation Reduction Act of 2022, or IRA, was signed into law on August 16, 2022. The \$370 billion allocated to climate and clean energy investments dramatically expands tax credits and incentives to deploy more clean vehicles, including commercial vehicles, while supporting a domestic EV supply chain and charging infrastructure buildup. IRA transportation sector provisions will accelerate the shift to zero-emission vehicles (ZEVs) by combining consumer and manufacturing policies. The IRA extends the existing tax credit for electric vehicles and establishes a new tax credit for used electric vehicles, as well as establishes a new tax credit for commercial ZEVs. Under the IRA, commercial ZEVs will be eligible for a federal tax credit of up to the lesser of 30% of the sales price or the incremental cost of a comparable ICE-engine vehicle, capped at \$7,500 for vehicles under 14,000 pounds and \$40,000 for all others. In addition, governmental entities may also be eligible to claim these credits. Vehicles' final assembly must be in North America to be eligible for the federal tax credit, but commercial vehicles are exempt from the battery or mineral sourcing requirements that apply to consumer electric vehicles. The federal tax credit on charging equipment has been extended through 2032. For commercial uses, the tax credit is 6% with a maximum credit of \$100,000 per unit. The equipment must be placed in a low-income community or non-urban area. The IRS has yet to release further guidance on specific aspects of the aforementioned credits. The announcement of the IRA and the delay in receiving IRS guidance as to the roll-out of the new tax credits has reduced the number of customer orders during the fourth quarter of 2022 and the first quarter of 2023, as many existing or potential customers are waiting to place orders until they are certain of the amount of tax credits available per ZEV. In addition, many customers are evaluating the size and type of ZEV they intend to purchase because the amount of the tax credit depends on the weight of the vehicle, among other factors. Furthermore, other government programs, such as the FTA's Low- and No-Emission Vehicle Program or certain state programs, recently announced new funding and are in the process of making these funds available for eligible purchases. Until these processes are established, we believe, customer orders may be delayed.

- Supply-chain challenges. We have experienced significant delivery delays from our suppliers from beginning of the COVID-19 pandemic through most of 2022. In addition, we often do not get informed of delivery delays until or after the expected delivery dates and have, at times, also experienced deliveries in advance of expected delivery dates without prior notice (for orders that were previously delayed), which does not allow for adequate planning. We have also experienced shortages of chassis and other components. As a result of these planning challenges, we have increased our inventory of raw materials and critical components, such as chassis, batteries or motors, and added new suppliers to optimize cost, minimize supply chain issues and prepare for an increase in future production. However, adding new suppliers, especially for chassis, increases requirements for working capital and places us at the mercy of price volatility. We expect supply chain challenges will continue for the foreseeable future.

Inflation and interest rates. We are experiencing cost increases due to inflation resulting from various supply chain disruptions and other disruptions caused by the COVID-19 pandemic and general global economic conditions. The cost of raw materials, manufacturing equipment, labor and shipping and transportation has increased considerably. We expect higher than recent years' levels of inflation to persist for the foreseeable future. If we are unable to fully offset higher costs through price increases or other measures, we could experience an adverse impact to our business, prospects, financial condition, results of operations and cash flows. Interest rates have also increased considerably. The increase in inflation and interest rates impacts the demand for our EVs, as customers may delay purchasing and/or have difficulty financing their purchases.

Off-Balance Sheet Arrangements

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our own shares and classified as shareholder's equity, or that are not reflected in our consolidated financial statements. We do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. We do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

Tabular Disclosure of Contractual Obligations

The following table sets forth our contractual obligations as of December 31, 2022:

Contractual Obligations	Payment due by period				
	Total	less than 1 year		3-5 years	more than 5 years
		(\$ in thousands)			
Convertible bonds	\$ 45,236	\$ 45,236	\$ —	\$ —	\$ —
Short-term borrowings	9,693	9,693	—	—	—
Long-term debt obligations	6,968	371	897	5,566	134
Operating lease obligations	23,712	2,571	4,758	4,558	11,825
Consideration payable	61,617	61,617	—	—	—
Due to an affiliate	10,548	10,548	—	—	—
Total	\$ 157,774	\$ 130,036	\$ 5,655	\$ 10,124	\$ 11,959

ITEM 7A. Quantitative and Qualitative Disclosures about Market Risk

Foreign Exchange Risk

We currently conduct our business operations in the U.S., Japan, the U.K., Greece, Italy and Australia. The functional currency of our Company and our subsidiaries located in the United States is the U.S. dollar. The functional currency of our subsidiaries located in Europe and Australia are the Euro and AUD, respectively. Transactions denominated in foreign currencies are re-measured into the functional currency at the rates of exchange prevailing when the transactions occur. Monetary assets and liabilities denominated in foreign currencies are re-measured into the functional currency at rates of exchange in effect at the balance sheet dates. Exchange gains and losses are included in our consolidated statements of operations.

Our reporting currency is the U.S. dollar. Assets and liabilities of subsidiaries, whose functional currency is not the U.S. dollar, are translated into the U.S. dollar using exchange rates in effect at each period end, and revenues and expenses are translated into the U.S. dollar at average rates prevailing during the year. Gains and losses resulting from the translations of the financial statements of these subsidiaries into the U.S. dollar are recognized as other comprehensive income in our consolidated statements of comprehensive income.

Depending on movements in foreign exchange rates, the foreign currency exchange may have an adverse impact on our consolidated financial statements. In 2021 and 2022, we recorded foreign currency exchange gain of \$2.7 million and \$2.6 million in our consolidated statements of operations, respectively.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expenses incurred on our short-term and long-term borrowings, as well as interest income generated from excess cash invested in demand deposits. Such interest-earning instruments carry a degree of interest rate risk. We have not used any derivative financial instruments to manage our interest rate risk exposure. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates. However, our future interest expense may increase due to changes in market interest rates. If market interest rates for short-term demand deposits increase in the near future, such increase may cause the amount of our interest income to rise. A hypothetical 10% increase in the average interest rate for our bank borrowings would result in an increase of approximately \$0.5 million and \$0.2 million in interest expense for the years ended December 31, 2021 and 2022. We may use derivative financial instruments, such as interest rate swaps, to mitigate potential risks of interest expense increases due to changes in market interest rates.

ITEM 8. Financial Statements and Supplementary Data

Consolidated Financial Statements

The information required by Item 8 appears after the signature page to this report. Please refer to F-1 to F- 50 of this document.

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

None.

ITEM 9A. Controls and Procedures

Disclosure Controls and Procedures

As of the end of the period covered by this annual report, our management, with the participation of our chief executive officer and chief financial officer, has performed an evaluation of the effectiveness of our disclosure controls and procedures within the meaning of Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Disclosure controls and procedures are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) accumulated and communicated to a company's management, including its principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Based upon this evaluation, our management has concluded that, as of December 31, 2022, our existing disclosure controls and procedures were ineffective because of the material weaknesses described below under "Management's Annual Report on Internal Control over Financial Reporting." We have undertaken the remedial steps to address the material weaknesses in our disclosure controls and procedures as set forth below under "Management's Plan for Remediation of Material Weaknesses."

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with U.S. GAAP and includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of a company's assets, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that a company's receipts and expenditures are being made only in accordance with authorizations of a company's management and directors, and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of a company's assets that could have a material effect on the consolidated financial statements. A "material weakness" is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis.

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Our management, with the participation of our chief executive officer and chief financial officer, conducted an evaluation of the effectiveness of our company's internal control over financial reporting as of December 31, 2022 based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 2013 Framework). Based on this evaluation, we noted the following deficiencies that we believe to be material weaknesses:

- a. Failure to maintain an effective control environment of internal control over financial reporting;
- b. Failure to develop an effective risk assessment process to identify and evaluate at a sufficient level of detail all relevant risks of material misstatement, including business, operational, and fraud risks;
- c. Ineffective monitoring activities to assess the operation of internal control over financial reporting;
- d. Ineffective process-level controls associated with the revenue, purchasing and inventory, treasury, property and equipment, tax, and payroll processes that (a) addressed relevant risks, (b) provided sufficient evidence of performance, and (c) established appropriate segregation of duties, during the financial reporting processes;
- e. Lack of sufficient controls designed and implemented for financial information processing and reporting and lacked resources with requisite skills for the financial reporting under U.S. GAAP; and
- f. Lack of sufficient controls designed and implemented in IT environment and IT general control activities, which mainly associated with areas of logical access security, system change, computer operation and service organization control monitoring activities. Certain process-level automated controls and manual controls that are dependent on the completeness and accuracy of information derived from the affected information technology systems were also ineffective.

As a result of the above material weaknesses, management has concluded that our internal control over financial reporting was ineffective as of December 31, 2022.

Management's Plan for Remediation of Material Weaknesses

Our management has been engaged in, and continues to be engaged in making necessary changes and improvements to the overall design of its control environment to address the material weaknesses, significant deficiencies and control deficiencies in internal control over financial reporting and the ineffectiveness of our disclosure controls and procedures and of internal control over financial reporting described above.

To remediate the material weaknesses described above, we plan to continue to establish a comprehensive and effective internal control system with the assistance from third party consulting firm which shall provide relevant professional advisory services to us. We plan to continue to assess our standardized processes to further enhance the effectiveness of our financial review, including the analysis and monitoring of financial information in a consistent and thorough manner. The Company's remediation actions to be taken were highlighted as follows:

- a. Strengthen overview and monitoring from the Company's governance, and set up the Company's internal audit department who reports to the audit committee directly, to ensure enhanced oversight over the Company's financial reporting function;
- b. Engage a professional adviser to review, test and optimize the Company's internal control system, particularly focusing on the material weaknesses identified as above.

- c. Launch and improve the internal control execution plan to supervise and monitor the operational functions;
- d. Establish a formal and systematic risk assessment program and involve upper management to identify and analyze risks.
- e. Provide our accounting team and other relevant personnel with more comprehensive guidelines and training on the policies and controls over financial reporting under U.S. GAAP and SEC rules and requirements
- f. Strengthen the review controls on journal entries and accounting treatments and adjustment by providing our accounting team with more comprehensive guidelines on the policies and controls over financial reporting under U.S. GAAP and SEC rules and requirements.
- g. Enhance management monitoring and review of key processes with more comprehensive guidelines on the policies and controls over financial reporting.
- h. Strengthen the monitoring and evaluation of the independent and competent tax and accounting agencies.
- i. Strengthen the supervision and controls on the IT functions, including the enhancement of logical security and monitor service provider.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. In addition, projections of any evaluation of effectiveness of our internal control over financial reporting to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate. See "Item 3. Key Information-D. Risk Factors-Risks Relating to Our Business-If we fail to implement an effective system of internal controls, we may be unable to accurately report our results of operations or prevent fraud or fail to meet our reporting obligations, and investor confidence and the market price of our ordinary shares may be materially and adversely affected."

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the fourth fiscal quarter of the year ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

As of the date of this annual report, we have engaged in, and will continue to engage measures to improve our internal control over financial reporting. See "[Item 9A. Controls and Procedures](#)-Management's Annual Report on Internal Control over Financial Reporting-Management's Plan for Remediation of Material Weaknesses."

ITEM 9B. Other Information.

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

ITEM 10. Directors, Executive Officers and Corporate Governance

The following table sets forth the names and ages of our current board of directors (the "Board") and our named executive officers and the principal offices and positions held by each person. Our executive officers are appointed by the Board. Our directors serve until the earlier to occur of the appointment of his or her successor at the next meeting of shareholders, death, resignation or removal by the Board. There are no family relationships among our directors and our named executive officers.

Name	Age	Position
Xiaofeng Peng	48	Director, Executive Chairman of the Board of Directors and Chief Executive Officer
HoongKhoeng Cheong	58	Director and Chief Operating Officer
Janet Chan	52	Chief Financial Officer
Maurice Wai-fung Ngai	61	Independent Non-Executive Director
Lu Qing	52	Independent Non-Executive Director
Jing Zhang	68	Independent Non-Executive Director

Set forth below is a brief biography of each director, named executive officer and significant employee that contains information regarding the individual's service as a director, named executive officer or significant employee including business experience for the past five years. In addition, information for directors includes directorships held during the past five years, information concerning certain legal or administrative proceedings, if applicable, and the experiences, qualifications, attributes or skills that caused the Board to determine that the individual should serve as a director for us.

Mr. Xiaofeng Peng has served as a director and the executive chairman of our Board since January 10, 2011 and as our chief executive officer since March 25, 2016. Mr. Peng was appointed chairman of the Board pursuant to the Stock Purchase Agreement entered into between us and LDK on

January 5, 2011. Mr. Peng founded LDK in July 2005 and is its chairman of the board and chief executive officer. Prior to founding LDK, Mr. Peng founded Suzhou Liouxin Co., Ltd., or Suzhou Liouxin, in March 1997 and was its chief executive officer until February 2006. Suzhou Liouxin is a leading manufacturer of personal protective equipment in Asia. Mr. Peng graduated from Jiangxi Foreign Trade School with a diploma in international business in 1993 and from Beijing University Guanghua School of Management with an executive MBA degree in 2002.

Mr. HoongKhoeng Cheong has served as our director since September 2017, as and our chief operating officer since May 2014. Mr. Cheong has more than 20 years of engineering and operation experience in the solar and electronics industries. He served in various management positions in LDK from 2011 to 2014 and he was appointed as the chairman of the Management Board and chief executive officer of Sunways AG, a publicly-listed company in Germany. He previously served as our general manager from 2007 to 2011 and was responsible for PV system design and development as well as the manufacturing of key components for PV modules and racking systems before joining LDK. Prior to joining the solar industry in 2007, Mr. Cheong spent 16 years in the electronics industry responsible for engineering development and manufacturing of liquid crystal display products and he served as the Vice President of Engineering of an affiliate of Flex Company. Mr. Cheong holds a Bachelor of Science degree in mechanical engineering from the University of Louisiana and obtained his Master of Science in computer integrated manufacturing from Nanyang Technology University, Singapore in 1997.

Ms. Janet Chan as served as our Chief Financial Officer since June 2021. Ms. Chan has over 20 years' experience in accounting, auditing, and financial advisory business. Before joining the Company, Ms. Chan was the executive director of Brainzoom Business Consulting Co., Ltd. since July 2007. Ms. Chan served as a vice president and finance director of Cellon International Holdings Corporation from January 2006 to May 2007. Previously, Ms. Chan served as an audit manager of Arthur Andersen from June 1993 to June 2000. Ms. Chan obtained a Bachelor degree in accounting from Shenzhen University in 1993. Ms. Chan is a Certified Public Accountant in China (CICPA) and a Fellowship of Chartered Certified Accountant (FCCA).

Dr. Maurice Wai-fung Ngai has served as our director since May 9, 2016. Dr. Ngai is currently a member of the General Committee and the Chairman of Membership Services of Sub-Committees of the Chamber of Hong Kong Listed Companies. He was the president of the Hong Kong Institute of Chartered Secretaries (currently known as the Hong Kong Chartered Governance Institute) (2014-2015), a non-official member of the Working Group on Professional Services under the Economic Development Commission of the Hong Kong Special Administrative Region (2013-2018), a member of the Qualification and Examination Board of the Hong Kong Institute of Certified Public Accountants (2013-2018) and the first batch of Finance Expert Consultants of Ministry of Finance of the People's Republic of China (2016-2021). Dr. Ngai is a fellow of the Association of Chartered Certified Accountants in the United Kingdom, a member of the Hong Kong Institute of Certified Public Accountants, a fellow of the Chartered Governance Institute, a fellow of the Hong Kong Chartered Governance Institute, a fellow of the Hong Kong Institute of Directors, a member of the Hong Kong Securities and Investment Institute and a member of the Chartered Institute of Arbitrators. Dr. Ngai obtained a Doctoral Degree in Finance at Shanghai University of Finance and Economics, a Master's Degree in Corporate Finance from Hong Kong Polytechnic University, a Master's Degree in Business Administration from Andrews University of Michigan and a Bachelor's Degree in Laws at University of Wolverhampton. He is serving as an independent non-executive director of several reputable listed companies

Ms. *Lu Qing* has served as our director since May 2017. She currently serves as the chief operating officer of WisePublic Asset Management Limited, where she manages daily operation. Ms. Lu Qing has qualified experience in the finance, accounting, tax and legal fields. She served the head of internal audit of China Regenerative Medicine International Limited (8158 HK) from January 2013 to October 2015. Ms. Lu Qing also served as financial controller of Mainland China at Sing Tao News Corporation Limited (1105 HK) from May 2002 to May 2008. From February 1992 to March 2002, Ms. Lu Qing served as one of the major business partners and vice general manager at Peking Certified Public Accountants. Ms. Lu Qing received bachelor's degree in economics, major in accounting from Central University of Finance and Economics in June 1993, and a master's degree in law from Peking University in January 2001. Ms. Lu Qing is also a Certified Tax Agents, Certified Public Valuer, and Certified Public Account in China.

Mr. *Jing Zhang* has served as our director since March 30, 2020. Mr. Zhang has served as a director of Hong Kong Dongying Financial Group since 2012, where he manages the group's private equity operations. He has also been an independent director of New City Construction Development Group Co., Ltd. and China International Capital Corporation since 2012. He served as a deputy general manager of China Yituo Group Co., Ltd. and a director and chief financial officer of First Tractor Co., Ltd. from 1997 to 2007. Mr. Zhang Jing received his Master degree in Management Engineering from Jiangsu University.

Family Relationships

There are no family relationships among our executive officers, directors and significant employees.

Involvement in Certain Legal Proceedings

To the best of our knowledge, there have been no events under any bankruptcy act, no criminal proceedings and no judgments, injunctions, orders or decrees material to the evaluation of the ability and integrity of any director, executive officer, promoter or control person of our Company during the past ten years.

Board of Directors

Our board of directors currently consists of five directors, three of whom satisfy the "independence" requirements of Rule 10A-3 under the Exchange Act and Rule 5605 of the NASDAQ Rules. The Board of Directors has determined that Maurice Ngai, Qing Lu and Jing Zhang are independent under Rule 5605(a)(2) of the NASDAQ Rules.

A director is not required to hold any shares in the Company by way of qualification. A director who is in any way, whether directly or indirectly, interested in a contract or transaction or proposed contract or transaction with our company must declare the nature of his interest at a meeting of the directors. Subject to the NASDAQ Rules and disqualification by the chairman of the relevant board meeting, a director may vote in respect of any contract or transaction or proposed contract or transaction notwithstanding that he or she may be interested therein and if he or she does so his or her vote shall be counted and he or she may be counted in the quorum at the relevant board meeting at which such contract or transaction or proposed contract or transaction is considered. Our board of directors may exercise all of the powers of our Company to borrow money, to mortgage or charge our undertakings, property and uncalled capital, and to issue debentures or other securities whenever money is borrowed or pledged as security for any debt, liability or obligation of our Company or of any third party.

Board Operations

One person holds the positions of principal executive officer and chairman of the Board of Company. The Board has not designated a lead director. Given the limited number of directors comprising the Board, the independent directors call and plan their executive sessions collaboratively and, between board meetings, communicate with management and one another directly. In the circumstances, the directors believe that formalizing in a lead director functions in which they all participate might detract from rather than enhance performance of their responsibilities as directors. The Chairman of the Board chairs Board and stockholder meetings and participates in preparing their agendas. The Chairman of the Board also serves as a focal point for communication between management and the Board between Board meetings, although there is no restriction on communication between directors and management. The Company believes that these arrangements afford the directors sufficient resources to supervise management effectively, without being overly engaged in day-to-day operations.

The Board plays an active role, as well as the independent committees, in overseeing the management of the Company's risks. The Board regularly reviews reports from members of senior management and committees on areas of material risk to the Company, including operational, financial, legal, strategic and regulatory risks.

The Board of Directors held 10 meetings during 2022. During 2022, no director attended fewer than 75% of the meetings of the Board of Directors and Board committees of which the director was a member.

Committees of the Board of Directors

We have an audit committee, a compensation committee and a nominating and corporate governance committee, comprised solely of independent directors. Each committee has a charter, which is available at Company's website, www.spigroups.com.

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Audit Committee

The Audit Committee consists of Maurice Wai-fung Ngai, Qing Lu and Jing Zhang and is chaired by Maurice Wai-fung Ngai. The Board has determined that Maurice Wai-fung Ngai is an audit committee financial expert, as defined by the SEC rules. The audit committee assists the Board's oversight of (1) the quality and integrity of our financial statements and related disclosure, (2) our compliance with legal and regulatory requirements, (3) the independent auditor's qualifications and independence, (4) the performance of our internal audit function and independent auditors and (5) related-party transactions. The audit committee is responsible for, among other things:

- appointing the independent auditors and pre-approving any non-audit services to be performed by the independent auditors;
- reviewing and approving all proposed related-party transactions;
- reviewing with the independent auditors any audit problems or difficulties and management's response;
- discussing the audited financial statements with management and the independent auditors;
- reviewing major issues as to the adequacy of our internal controls and any significant deficiencies or material weaknesses in internal controls;
- meeting separately and periodically with management and the independent auditors;
- reviewing with the general counsel the adequacy of procedures to ensure compliance with legal and regulatory responsibilities; and
- reporting regularly to the entire board of directors.

The Audit Committee held 3 meetings during 2022.

Compensation Committee

Our compensation committee consists of Lu Qing, Maurice Wai-fung Ngai and Jing Zhang, and is chaired by Qing Lu. The compensation committee has overall responsibility for evaluating and recommending to the Board compensation of our directors and executive officers and our equity-based and incentive compensation plans, policies and programs. The compensation committee is responsible for, among other things:

- approving and overseeing the total compensation package for our executives;
- reviewing and recommending to the Board the compensation of our directors;
- reviewing and approving corporate goals and objectives relevant to the compensation of our chief executive officer, evaluating the performance of our chief executive officer in light of those goals and objectives, and setting the compensation level of our chief executive officer based on this evaluation;
- reviewing periodically and recommending to the Board and administering any long-term incentive compensation or equity plans, programs or similar arrangements; and
- reporting regularly to the entire board of directors.

The Compensation Committee held 1 meetings during 2022.

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Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Jing Zhang, Maurice Wai-fung Ngai and Qing Lu, and is chaired by Jing Zhang. The nominating and corporate governance committee assists the board of directors in selecting individuals qualified to become our directors and in determining the composition of the Board and its committees. The nominating and corporate governance committee is responsible for, among other things:

- identifying and recommending to the Board nominees for election to the Board or for appointment to fill any vacancy that is anticipated or has arisen on the Board;
- reviewing annually with the Board the current composition of the Board in light of the characteristics of independence, age, skills, experience and availability of service to us of its members and of anticipated needs;
- identifying and recommending to the Board the directors to serve as members of the Board's committees;
- advising the Board periodically regarding significant developments in law and practice of corporate governance and making recommendations to the Board on all matters of corporate governance;
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance; and
- reporting regularly to the entire board of directors.

Nominating and Corporate Governance Committee held 0 meetings during 2022.

Duties of Directors

Under Cayman Islands law, our directors owe to us fiduciary duties, including a duty of loyalty, a duty to act honestly and a duty to act in what they consider in good faith to be in our best interests. Our directors also have a duty to exercise the skill they actually possess and such care and diligence that a reasonably prudent person would exercise in comparable circumstances. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association, as amended and restated from time to time. Our Company has the right to seek damages if a duty owed by our directors is breached.

Terms of Directors and Executive Officers

The members of the Board serve until their successors are duly elected and have qualified. Our officers are appointed by and serve at the discretion of the board of directors. A director will cease to be a director if, among other things, the director (i) becomes bankrupt or makes any arrangement or composition with his creditors; (ii) dies or is found by our company to be or becomes of unsound mind; (iii) resigns his office by written notice to the Company; (iv) the board resolves that his office be vacated; or (v) is removed from office pursuant to any other provision of our memorandum and articles of association.

Material Changes to the Procedures by which Security Holders May Recommend Nominees to the Board

We do not currently have a procedure by which security holders may recommend nominees to the Board.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires the Company's directors, officers and stockholders who beneficially own more than 10% of any class of equity securities of the Company registered pursuant to Section 12 of the Exchange Act, collectively referred to herein as the "Reporting Persons," to file initial statements of beneficial ownership of securities and statements of changes in beneficial ownership of securities with respect to the Company's equity securities with the SEC. All Reporting Persons are required by SEC regulation to furnish us with copies of all reports that such Reporting Persons file with the SEC pursuant to Section 16(a). Based solely on our review of the copies of such reports and upon written representations of the Reporting Persons received by us, we believe that the following Reporting Persons have not timely complied with the Section 16(a) filing requirements:

Name	Late Reports	Transactions Covered	Number of Shares
Shan Zhou	Form 4	Acquisition of Stock	6,023,204
Hoong Khoeng Cheong	Form 4	Acquisition of Stock	938,280

Code of Ethics

Our board of directors believes in strict adherence to the highest standards of business ethics and responsibility. We have thus adopted a code of business conduct and ethics that applies to us and our directors, officers, employees and advisors. Certain provisions of the code apply specifically to our chief executive officer, chief financial officer, senior operating officer and any other persons who perform similar functions for us. We have filed this code of business conduct and ethics as an exhibit to this annual report on Form 10-K. The code of business conduct and ethics is also available at our website at www.spigroups.com.

ITEM 11. Executive Compensation

Summary Compensation Table

The following Summary Compensation Table summarizes the total compensation accrued for our named executive officers in each of fiscal 2022 and 2021.

Name and Principal Position	Fiscal Year Ended December 31,	Salary (\$)	Bonus (\$)	Stock and Option Awards (\$)	All Other Compensation (\$)	Total (\$)
Xiaofeng Peng (Director, Executive Chairman of Board Directors, Chief Executive Officer)	2022	196,667		300,000(1)		496,667
	2021	196,667	\$	–	2,457,300(2)	\$

HoongKhoeng Cheong (Director, Chief Operating Officer)	2022	290,140	–	120,000(3)	–	410,140
	2021	290,140	–	975,450(4)	–	1,265,590
Janet Chan (Chief Financial Officer)	2022	244,524	–	30,000(5)	–	274,524
	2021	122,262	–	200,000(6)	–	261,181

(1) 110,701 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

(2) Consists of 240,000 options with the exercise price of \$6.81 granted on March 6, 2021 ("Date of Grant"). The Option shall vest and become exercisable with respect to twenty-five percent (25%) of the shares initially covered by the option on each of the first, second, third and fourth anniversaries of the Date of Grant. 130,000 restricted shares were vested on July 6,2021, of which fair value per share is \$6.33.

(3) 44,280 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

(4) Consists of 120,000 options with the exercise price of \$6.81 granted on March 6, 2021 ("Date of Grant"). The Option shall vest and become exercisable with respect to twenty-five percent (25%) of the shares initially covered by the option on each of the first, second, third and fourth anniversaries of the Date of Grant. 25,000 restricted shares were vested on July 6,2021, of which fair value per share is \$6.33.

(5) 11,070 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

(6) On June 23, 2021, Janet Chen was granted 200,000 options with the exercise price of \$6.83. The Option shall vest and become exercisable with respect to twenty-five percent (25%) of the shares initially covered by the option on each of the first, second, third and fourth anniversaries of the Date of Grant.

Employment Agreements

We have entered into employment agreements with each of our executive officers. These employment agreements became effective on the signing date and will remain effective through 2023. We may terminate an executive officer's employment for cause for certain acts of the officer, including, but not limited to, conviction of a felony, any act involving moral turpitude, or a misdemeanor where imprisonment is imposed; commission of any act of theft, fraud, dishonesty, or falsification of any employment or Company records; improper disclosure of the Company's confidential or proprietary information; any action that has a detrimental effect on the Company's reputation or business; or failure to perform agreed duties. We may also terminate an executive officer's employment without cause. Each of us or the relevant executive officer may terminate the employment by giving advance written notice. We may renew the employment agreements with our executive officers.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth, for each named executive officer, information regarding unexercised stock options, unvested stock awards, and equity incentive plan awards outstanding as of December 31, 2022.

Name	OUTSTANDING EQUITY AWARDS AT 2022 FISCAL YEAR END							Equity Incentive Plan Awards: Market or Payout Number Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)	
	OPTION AWARDS				STOCK AWARDS				
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Market Value of Shares or Units of Stock That Have Not Vested (\$)	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (\$)	Market Value of Shares or Units of Stock That Have Not Vested (\$)		
Xiaofeng Peng, CEO	–	60,000	180,000	6.81	3/6/2031	–	–	–	
HoongKhoeng Cheong, COO	76,000	–	90,000	3.63-6.81	9/6/2027-3/6/2031	–	–	–	
Janet Chen, CFO	50,000-	–	150,000	6.83	6/23/2031	–	–	–	

Compensation Committee Interlocks and Insider Participation

We are a smaller reporting company as defined by Rule 12b-2 of the Securities Exchange Act of 1934 and are not required to provide the information under this item.

Pension Benefits

None of SPI's named executive officers participate in or have account balances in qualified or nonqualified defined benefit plans sponsored by it.

Nonqualified Deferred Compensation

None of SPI's named executive officers participate in or have account balances in nonqualified defined contribution plans or other deferred compensation plans maintained by it.

Compensation of Directors

The following table sets forth information regarding compensation of each director, excluding our executive directors, Xiaofeng Peng and Hoong Khoeng Cheong, who do not receive compensation in their capacity as executive directors, for fiscal 2022.

FISCAL 2022 DIRECTOR COMPENSATION							
Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)	Option Awards \$(I)	Non-Equity Incentive Plan Compensation (\$)	Nonqualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total (\$)
Maurice Ngai	0	10,000(1)	–	–	–	–	10,000
Qing Lu	0	10,000(2)	–	–	–	–	10,000
Jing Zhang	0	10,000(3)	–	–	–	–	10,000

(1) 3,690 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

(2) 3,690 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

(3) 3,690 restricted shares were vested on January 23, 2022, of which fair value per share is \$2.71.

Stock Incentive Plans

2006 Equity Incentive Plan

On November 15, 2006, SPI's board of directors adopted the 2006 Equity Incentive Plan, reserving nine percent (9%) of the outstanding shares of SPI's common stock for the plan, and this plan was approved by SPI's shareholders on February 7, 2007. Upon completion of the Redomicile Merger, our Company assumed SPI's existing obligations under the 2006 Equity Incentive Plan and an equal number of the Company's ordinary shares, rather than the common stock of SPI, will be issued upon the exercise of the awards under this plan.

The following are principal terms under our 2006 Equity Incentive Plan:

Administration. The administrator is a committee consisting of two or more independent members of the Board appointed by the Board to administer this plan, or if there is no such committee, the Board itself.

Awards. We may grant incentive and non-qualified share options, restricted shares, unrestricted shares and share appreciation rights under this plan.

Award Agreements. Each award granted under this plan will be evidenced by a signed written award agreement between the Company and the award recipient.

Exercise Price. The exercise price of any option or share appreciation right will be determined by the administrator in accordance with this plan.

Terms of Awards. The term of options granted under this plan may not exceed ten years (or five years, in the case of an incentive share option granted to an optionee who owns more than ten percent of the total combined voting power of all classes of share of the Company). The term of a share appreciation right will be set forth in the award agreement as determined by the administrator.

Vesting Schedule. The administrator may determine in its discretion whether any award will be subject to vesting and the terms and conditions of any such vesting. The award agreement will contain any such vesting schedule.

Transfer Restrictions. No options, restricted shares awards (prior to vesting, subject to the plan and the award agreement) or share appreciation rights may be transferred other than by will or by the laws of descent or distribution, except that non-qualified options and share appreciation rights may be transferred to an award recipient's former spouse pursuant to a property settlement made part of an agreement or court order incident to the divorce. During the lifetime of an award recipient, only the award recipient, his guardian or legal representative may exercise an option (other than an incentive share option) pursuant to a domestic relations order in accordance with the plan. During the lifetime of an award recipient, only the award recipient may exercise the restricted share awards or share appreciation rights.

Termination of Employment or Service. In the event that an award recipient terminates employment with us or ceases to provide services to us, an award may be exercised following the termination of employment or services as provided in the plan and the award agreement.

Termination and Amendment of the Plan. This plan was assumed in 2016. Our Board has the authority to amend, suspend or terminate the plan, subject to shareholder approval with respect to certain amendments. No award will be granted after termination of this plan but all awards granted prior to termination will remain in effect in accordance with their terms.

On May 8, 2015, our board of directors adopted our 2015 Equity Incentive Plan. Our shareholders approved this plan on the same date. This plan went effective upon completion of the Redomicile Merger. The total number of Shares that may be issued under this plan was nine percent (9%) of the number of outstanding and issued ordinary shares of the Company. On December 9, 2022, our shareholders approved to amend this plan to increase the number of ordinary shares authorized for issuance under the Plan to 4,326,185 ordinary shares. Awards may, in the discretion of the administrator, be made under this plan in assumption of, or in substitution for, outstanding awards previously granted by the Company or its affiliates or a company acquired by the Company or with which the Company combines. The number of shares underlying such substitute awards shall be counted against the aggregate number of shares available for awards under the plan.

The following are principal terms under our 2015 Equity Incentive Plan, as amended:

Administration. This plan is administered by the compensation committee of our Board, and the compensation committee may delegate its duties and powers in whole or in part to any subcommittee of it.

Awards. We may grant non-qualified or incentive share options, share appreciation rights and other share-based awards such as restricted shares under this plan.

Option / Exercise Price. The purchase price per share of any option and the exercise price of any share appreciation right will be determined by the administrator in accordance with the plan.

Terms of Awards. The term of options granted under this plan may not exceed ten years from the date of grant. *Vesting Conditions.* The administrator has full power and authority to accelerate or waive any vesting conditions.

Transfer Restrictions. Unless otherwise determined by the administrator and subject to terms and conditions of the plan, an award may not be transferred other than by will or by the laws of descent and distribution.

Adjustments upon Certain Events. In the event of any change in the outstanding shares by reason of certain corporate transactions, the administrator will in its sole discretion make such substitution or adjustment (if any) as to the number or kind of securities issued or reserved for issuance pursuant to the plan or outstanding awards, the maximum numbers of awards that may be granted during a calendar year to any award recipient, the option or exercise price of any awards, or other affected terms of the awards. In the event of a change of control, the administrator may (1) determine any outstanding awards to be automatically exercisable or otherwise vested or no longer subject to lapse restrictions; or (2) cancel these awards in accordance with the plan, provide for issuance of substitute awards that substantially preserve the otherwise applicable terms of these awards, or provide that relevant options shall be exercisable within a period of at least 15 days prior to the change of control and shall terminate upon occurrence of the change of control.

Termination and Amendment of Plan. Unless terminated earlier, this plan shall terminate automatically in 2025. Our Board may amend, alter or discontinue this plan in accordance with terms and conditions of the plan. No award may be granted under the plan after termination date, but awards granted prior to termination will remain in effect.

Equity Incentive Plan for Phoenix Motorcars Employees

On January 24, 2021, our board of directors adopted our Equity Incentive Plan for Phoenix Motorcars Employees which is specifically prepared for 2020 Phoenix acquisition. The following are principal terms under our Equity Incentive Plan for Phoenix Motorcars Employees:

Purpose. The purpose of the SPI Energy Co., Ltd. ("Company") Equity Incentive Plan for Phoenix Motorcars Employees (the "Plan") is to provide material inducement to the employees of Phoenix Cars LLC, a Delaware limited liability company ("Cars"), and Phoenix Motorcars Leasing LLC, a California limited liability company ("Leasing," and, with Cars, the "LLCs"), which, as of November 12, 2020, the effective date hereof ("Effective Date"), have been acquired by Edisonfuture Inc., a Delaware corporation wholly owned by Company ("EFI"), to remain in the employment of the LLC's respectively employing them on and after the Effective Date, by offering these employees (the "Participants") the opportunity to participate in the Company's future performance. Capitalized terms not otherwise defined herein shall have the respective meanings given them in the Membership Interest Purchase Agreement, dated the Effective Date, between Al Yousuf, LLC, as Seller, and EFI, as Buyer ("MIPA").

Effectiveness. The Plan became effective automatically on the Effective Date.

Stay-bonus awards. On the date that is six months after the Effective Date, the Company will issue to each Participant, pursuant to a Stock Award Agreement in the form as set forth hereto on Exhibit I attached thereto, the number of Ordinary Shares that equals the product of the percentage ("Stay-bonus Percentage") set forth with respect to that Participant in MIPA Schedule 2.02 and the number of Stay-Bonus Shares.

Earn-out awards. Company will issue Ordinary Shares as Earn-out Shares, pursuant to amendments hereof or Earn-out Award Agreements the principal terms of which are set forth on Exhibit II attached hereto, to be negotiated in good faith between Company and holders of a majority of the Plan Percentages.

Withholding tax. Company shall have the right to deduct in cash in connection with any award any taxes required by law to be withheld and to require any payment required to enable it to satisfy its withholding obligations.

Amendment. This Plan may be amended only by written consent of Company and (i) with respect to the Stay-bonus awards Participants holding a majority of Stay-bonus Percentages; (ii) with respect to each of the two Earn-out Awards, by Participants entitled to receive a majority of that Earn-out Award, as Buyer designates; and (iii) any Participant that is disproportionately materially and adversely affected by the amendment (other than the designations referred to in clause (ii) above).

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

The following tables set forth information with respect to the beneficial ownership of our shares as of the date of the annual report.

- each of our directors and executive officers; and
- each person known to us to own beneficially in excess of 5% of our ordinary shares.

Directors and Executive Officers	Shares Beneficially Owned	Percentage Beneficially Owned
Xiaofeng Peng, Chairman of the Board ⁽¹⁾	6,023,204	19.88%
HoongKhoeng Cheong, Director and Chief Operating Officer	*	*
Janet Chan, Chief Financial Officer	*	*
Maurice Wai-fung Ngai, Director	*	*
Qing Lu, Director	*	*
Jing Zhang, Director	*	*
All Directors and Executive Officers as a Group ⁽²⁾	7,187,024	23.73%

(1) Consists of (i) 242,701 ordinary shares owned by Mr. Xiaofeng Peng; (ii) 1,248,163 ordinary shares of the Company owned by Ms. Shan Zhou, Mr. Peng's spouse, which may be deemed to beneficially owned by Mr. Peng; (iii) 4,412,340 ordinary shares and options to purchase an aggregate of 120,000 ordinary shares of the Company owned by Palo Alto Clean Tech Holding Limited (previously known as LDK New Energy Holding Limited, or PACT), which may be deemed to be beneficially owned by Mr. Peng. Ms. Zhou is a director of PACT and has investment power over the 4,532,340 ordinary shares of the Company owned by PACT.

(2) Consists of an aggregate of 6,863,624 ordinary shares and options to purchase an aggregate of 323,400 ordinary shares.

* Less than 5.0%.

Principal Shareholders	Ordinary Shares Beneficially Owned	Percentage Beneficially Owned
Shan Zhou(1)	6,023,204	19.88%

(1) Consists of (i) 1,248,163 ordinary shares of the Company owned by Ms. Shan Zhou; (ii) 242,701 ordinary shares owned by Mr. Xiaofeng Peng, which may be deemed to beneficially owned by Ms. Zhou as Mr. Peng's spouse; (iii) 4,412,340 ordinary shares and options to purchase an aggregate of 120,000 ordinary shares of the Company owned by Palo Alto Clean Tech Holding Limited (previously known as LDK New Energy Holding Limited, or PACT), which may be deemed to be beneficially owned by Ms. Zhou. Ms. Zhou is a director of PACT and has investment power over the 4,532,340 ordinary shares of the Company owned by PACT.

As of the date of this annual report, 30,292,960 ordinary shares are issued and outstanding. We cannot ascertain the exact number of beneficial shareholders with addresses in the United States.

None of our shareholders has different voting rights from other shareholders as of the date of this annual report. We are currently not aware of any arrangement that may, at a subsequent date, result in a change of control of our Company.

Securities Authorized for Issuance under Equity Compensation Plans

The following table provides information as of December 31, 2022 about our equity compensation plans and arrangements.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	1,293,900	8.0	3,033,285
Equity compensation plans not approved by security holders	—	—	—
Total	1,293,900	8.0	3,033,285

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

Certain Relationships and Related Transactions

The amount due from related parties of \$332 thousands and \$230 thousands as of December 31, 2022 and 2021, respectively, represented expense paid by the Company on behalf of a related party.

Related Party Policy

Our Audit Committee has adopted an internal policy regarding the identification, review, consideration and oversight of any transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any "related party" are participants. Transactions involving compensation for services provided to us as an employee, director, consultant or similar capacity by a related person are not covered. A related party is any executive officer, director or a holder of more than five percent of our ordinary shares, including any of their immediate family members and any entity owned or controlled by such persons.

Under our policy, where a transaction has been identified as a related party transaction, management must present information regarding the proposed related party transaction to the Audit Committee of our Board of Directors for review. The presentation must include a description of, among other things, the material facts, the direct and indirect interests of the related parties, the benefits of the transaction to us and whether any alternative transactions are available. To identify related party transactions in advance, we rely on information supplied by our executive officers, directors and certain significant shareholders. In considering related party transactions, the Audit Committee of our Board of Directors takes into account the relevant available facts and circumstances including, but not limited to the risks, costs and benefits to us; the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated; the terms of the transaction; the availability of other sources for comparable services or products; and the terms available to or from, as the case may be, unrelated third parties or to or from our employees generally. In the event a director has an interest in the proposed transaction, the director must excuse himself or herself from the deliberations and approval.

Director Independence

The Board has determined that Maurice Ngai, Qing Lu and Jing Zhang are "independent" under the current independence standards of Rule 5605(a)(2) of the Marketplace Rules of The NASDAQ Stock Market, LLC and meet the criteria set forth in Rule 10A(m)(3) under the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act").

ITEM 14. Accountant Fees and Services

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by Marcum Asia CPAs LLP, our current principal external auditors for the periods indicated.

	2021	2022
Audit fees	\$ 968,200	\$ 576,800
Audit-related fees	-	-
Tax fees	-	-
All other fees	-	-
Total	\$ 968,200	\$ 576,800

- (1) Audit fees consist of fees billed for professional services rendered for the audit and review of our financial statements and services that are normally provided by the above auditors in connection with statutory and regulatory filings or engagements.
- (2) Audit related fees consist of assurance and related services that are reasonably related to the performance of audit or review of our financial statements related to our SEC filings.

Consistent with the rules of the SEC regarding auditor independence, our Board of Directors is responsible for the appointment, compensation and oversight of the work of our independent registered public accounting firm. Our Board asks our independent registered public accounting firm to provide a detailed description of its services each year as a basis for its decision-making. The Board evaluates the proposals based on four categories: audit services, audit-related services, tax services, and other services; and determines the proper arrangement for each service according to its judgment as to our needs over the coming year. Our Board pre-approves all audit and non-audit services to be performed by our independent registered public accounting firm. The Board pre-approved 100% of the audit and audit-related services performed by the independent registered public accounting firms described above in fiscal years 2020 and 2021.

Pre-Approval of Services

In accordance with the SEC's auditor independence rules, the Audit Committee has established the following policies and procedures by which it approves in advance any audit or permissible non-audit services to be provided to the Company by its independent auditor.

Prior to the engagement of the independent auditor for any fiscal year's audit, management submits to the Audit Committee for approval lists of recurring audit, audit-related, tax and other services expected to be provided by the auditor during that fiscal year. The Audit Committee adopts pre-approval schedules describing the recurring services that it has pre-approved, and is informed on a timely basis, and in any event by the next scheduled meeting, of any such services rendered by the independent auditor and the related fees.

The fees for any services listed in a pre-approval schedule are budgeted, and the Audit Committee requires the independent auditor and management to report actual fees versus the budget periodically throughout the year. The Audit Committee will require additional pre-approval if circumstances arise where it becomes necessary to engage the independent auditor for additional services above the amount of fees originally pre-approved. Any audit or non-audit service not listed in a pre-approval schedule must be separately pre-approved by the Audit Committee on a case-by-case basis. Every request to adopt or amend a pre-approval schedule or to provide services that are not listed in a pre-approval schedule must include a statement by the independent auditors as to whether, in their view, the request is consistent with the SEC's rules on auditor independence.

The Audit Committee will not grant approval for:

- any services prohibited by applicable law or by any rule or regulation of the SEC or other regulatory body applicable to the Company;
- provision by the independent auditor to the Company of strategic consulting services of the type typically provided by management consulting firms; or
- the retention of the independent auditor in connection with a transaction initially recommended by the independent auditor, the tax treatment of which may not be clear under the Internal Revenue Code and related regulations and which it is reasonable to conclude will be subject to audit procedures during an audit of the Company's financial statements.

Tax services proposed to be provided by the auditor to any director, officer or employee of the Company who is in an accounting role or financial reporting oversight role must be approved by the Audit Committee on a case-by-case basis where such services are to be paid for by the Company, and the Audit Committee will be informed of any services to be provided to such individuals that are not to be paid for by the Company.

In determining whether to grant pre-approval of any non-audit services in the "all other" category, the Audit Committee will consider all relevant facts and circumstances, including the following four basic guidelines:

- whether the service creates a mutual or conflicting interest between the auditor and the Company;
- whether the service places the auditor in the position of auditing his or her own work;
- whether the service results in the auditor acting as management or an employee of the Company; and
- whether the service places the auditor in a position of being an advocate for the Company.

PART IV

ITEM 15. Exhibits, Financial Statements and Schedules

(a) 1. Financial Statements

The following are contained in this 2022 Form 10-K Report:

	Page
· Report of Independent Registered Public Accounting Firm (PCAOB ID 5395)	F-2
· Consolidated Balance Sheets	F-5
· Consolidated Statements of Operations	F-6
· Consolidated Statements of Comprehensive Loss	F-7
· Consolidated Statements of Equity	F-8
· Consolidated Statements of Cash Flows	F-10
· Notes to Consolidated Financial Statements	F-12

The Consolidated Financial Statements, Notes to the Consolidated Financial Statements and the Report of Independent Registered Public Accounting Firm listed above are filed as part of this Report and are set forth on pages F-1 through F-50 immediately following the signature page of this Report.

(a) 2. Financial Statement Schedules

None.

(a) 3. Exhibits

Exhibit Number	Description of Document
3.1	Amended and Restated Memorandum and Articles of Association, as currently in effect (incorporated by reference to Exhibit 3.2 of our registration statement on Form F-4 (File No. 333-204069) filed with the Securities and Exchange Commission on May 11, 2015)
4.1	Registrant's Specimen Certificate for Shares (incorporated by reference to Exhibit 4.1 of Amendment No. 1 to our registration statement on Form F-4 (file No. 333-204069) filed with the Securities and Exchange Commission on June 24, 2015)
4.2	Form of Warrant (incorporated by reference to Exhibit 4.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on December 4, 2020.)
4.3*	Description of Securities.
10.1	2006 Equity Incentive Plan (as amended) (incorporated by reference to Exhibit 4.2 to our Post Effective Amendment No. 1 to our registration statement on Form S-8 (file No. 333-203917) filed with the Securities and Exchange Commission on January 4, 2016)
10.2	Amended and Restated 2015 Equity Incentive Plan (incorporated by reference to Appendix A to our definitive proxy statement on Schedule 14A (filed with the Securities and Exchange Commission on November 1, 2022)
10.3	SPI Energy Co., Ltd. Equity Incentive Plan for Phoenix Motorcars Employees (incorporated by reference to Exhibit 4.83 to our Annual Report on Form 20-F for the year ended December 31, 2020, filed with the Securities and Exchange Commission on April 29, 2021)

10.4 [Form of Indemnification Agreement between the directors and the Registrant](#) (incorporated by reference to Exhibit 10.1 of our registration statement on Form F-4 (file No. 333-204069) filed with the Securities and Exchange Commission on May 11, 2015)

10.5 [Form of Project Management Agreement](#) (incorporated by reference to Exhibit 10.2 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on February 21, 2014)

10.6 [Convertible Promissory Note Purchase Agreement by and between Solar Power, Inc. and Brilliant King Group Ltd. dated December 12, 2014](#) (incorporated by reference to Exhibit 10.3 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on December 18, 2014)

10.7 [Convertible Promissory Note Purchase Agreement by and between Solar Power, Inc. and Poseidon Sports Limited dated December 12, 2014](#) (incorporated by reference to Exhibit 10.6 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on December 18, 2014)

10.8 [Convertible Promissory Note Purchase Agreement by and between Solar Power, Inc. and Union Sky Holding Group Limited dated December 15, 2014](#) (incorporated by reference to Exhibit 10.8 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on December 18, 2014)

Exhibit Number	Description of Document
10.9	GK Interest Sale and Purchase Agreement by and between SPI Solar Japan G.K. and Re Capital K.K. dated April 15, 2015 (incorporated by reference to Exhibit 10.1 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on April 17, 2015)
10.1	Securities Purchase Agreement by and between EnSync, Inc. (formerly known as ZBB Energy Corporation) and Solar Power, Inc. dated April 17, 2015 (incorporated by reference to Exhibit 10.2 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on April 17, 2015)
10.11	Convertible Promissory Note Purchase Agreement by and between Solar Power, Inc. and Vision Edge Limited dated June 15, 2015 (incorporated by reference to Exhibit 10.1 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on June 15, 2015)
10.12	Option Agreement by and between Solar Power, Inc. and Vision Edge Limited dated June 15, 2015 (incorporated by reference to Exhibit 10.2 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on June 15, 2015)
10.13	Supply Agreement between EnSync, Inc. (formerly known as ZBB Energy Corporation) and Solar Power, Inc. dated July 13, 2015 (incorporated by reference to Exhibit 10.3 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on April 17, 2015)
10.14	Governance Agreement between EnSync, Inc. (formerly known as ZBB Energy Corporation) and Solar Power, Inc. dated July 13, 2015 (incorporated by reference to Exhibit 10.2 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on July 14, 2015)
10.15	Second Amended and Restated Agreement and Plan of Merger and Reorganization by and among Solar Power, Inc., SPI Energy Co., Ltd. and SPI Merger Sub, Inc. dated October 30, 2015 (incorporated by reference to Exhibit 2.1 of our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on October 30, 2015)
10.16	Purchase Agreement by and between Alpha Assai fund sp of Sunrise SPC and SPI Energy Co., Ltd. dated October 10, 2017 (incorporated by reference to Exhibit 4.43 to our Annual Report on Form 20-F for the year ended December 31, 2016, filed with the Securities and Exchange Commission on October 27, 2017)
10.17	Sale and Purchase Agreement dated August 28, 2018 between SPI Energy Co., Ltd. and Lighting Charm Limited (incorporated by reference to Exhibit 4.38 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)
10.18	Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and Happy Goal Industries Limited (incorporated by reference to Exhibit 4.49 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)
10.19	Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and CHEONG Hoong Khoeng (incorporated by reference to Exhibit 4.50 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)

Exhibit Number	Description of Document
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10.20 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and LDK New Energy Holding Limited](#) (incorporated by reference to Exhibit 4.38 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)

10.21 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and LIM Joo Heng](#) (incorporated by reference to Exhibit 4.52 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)

10.22 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and UPC Co., Ltd.](#) (incorporated by reference to Exhibit 4.53 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)

10.23 [Share Purchase Agreement dated March 20, 2019 between SP Orange Power \(Cyprus\) Limited and Thermi Taneo Venture Capital Fund](#) (incorporated by reference to Exhibit 4.53 to our Annual Report on Form 20-F for the year ended December 31, 2018, filed with the Securities and Exchange Commission on April 30, 2019)

10.24 [Membership Interest Purchase Agreement for Oregon Portfolio dated on July 15, 2019 between Sulus LLC and SPI Solar, Inc.](#) (incorporated by reference to Exhibit 4.55 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.25 [Common Stock Purchase Agreement between Knight AG Holding Co., Ltd. and Jacky Lo.](#) (incorporated by reference to Exhibit 4.56 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.26 [Management Services Agreement dated on July 24, 2019 between Native American Agricultural Company and CBD and Hemp Group Co., Ltd.](#) (incorporated by reference to Exhibit 4.57 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.27 [Equipment Purchase Contract dated on August 6 2019 between CBD and Hemp Group Co., Ltd. and All Datum Inc.](#) (incorporated by reference to Exhibit 4.58 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.28 [Sales and Purchase Agreement dated on July 8 2019 between Bitmain Equipment \(Canada\) Inc. and 1215542 B.C.LTD](#) (incorporated by reference to Exhibit 4.59 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.29 [Hosting Agreement dated on July 9, 2019 between 1151203 B.C.LTD and 1215542 B.C.LTD](#) (incorporated by reference to Exhibit 4.60 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.30 [Supplemental Agreement dated on October 7, 2019 between 1151203 B.C.LTD and 1215542 B.C.LTD](#) (incorporated by reference to Exhibit 4.61 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.31 [Second Supplemental Agreement dated on March 8, 2020 between 1151203 B.C.LTD and 1215542 B.C.LTD](#) (incorporated by reference to Exhibit 4.62 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

Exhibit Number	Description of Document
10.32	Remote Hash Power Computing Service Agreement dated on July 15, 2019 between 1215542 B.C.LTD and SPI Orange Co., Ltd. (incorporated by reference to Exhibit 4.63 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.33	Securities Purchase Agreement dated on May 28, 2019 between SPI Energy Co., Ltd. and ILIAD RESEARCH AND TRADING, L.P. (incorporated by reference to Exhibit 4.64 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.34	Asset Purchase Agreement dated on July 31, 2019 between SPI Solar, Inc. and John M. Wirth (incorporated by reference to Exhibit 4.65 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.35	Sale and Purchase Agreement dated on September 23 2019 for Sun Roof II between SPI Renewables Energy (Luxemburg) Private Limited Company S.a.r.l and Theia Investments (Italy) S.r.l (incorporated by reference to Exhibit 4.66 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.36	Sale and Purchase Agreement dated on September 23 2019 for Sun Roof V between SPI Renewables Energy (Luxemburg) Private Limited Company S.a.r.l and Theia Investments (Italy) S.r.l (incorporated by reference to Exhibit 4.67 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.37	Sale and Purchase Agreement dated on March 16 2020 for Sun Roof I between SPI Renewables Energy (Luxemburg) Private Limited Company S.a.r.l and Theia Investments (Italy) S.r.l (incorporated by reference to Exhibit 4.68 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).
10.38	Standard Industrial/commercial Single Tenant Lease dated on September 15, 2019 between AI Factory, LLC and SPI Solar, Inc. (incorporated by reference to Exhibit 4.69 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

10.39	Acknowledgement dated September 25, 2020 between SPI Energy Co., Ltd. and Magical Glaze Limited (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on September 30, 2020).
10.40	Placement Agency Agreement dated September 30, 2020 between the registrant and Kingswood Capital Markets, Division of Benchmark Investment, Inc. (incorporated by reference to Exhibit 1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on October 1, 2020.)
10.41	Deed of Settlement and Release dated October 14, 2020 among Solar Juice Co. Ltd, Kun Fong Lee, Jinhan Zhou, Andrew Lawrence Burgess, Rami Ahmed Fedda, Allied Energy Holding Pie Ltd, Chin Piaw Tan and Solar Juice Ply Ltd (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on October 28, 2020.)
10.42	Securities Purchase Agreement dated November 3, 2020 between the registrant and Streeterville Capital LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on November 4, 2020.)

Exhibit Number	Description of Document
10.43	Form of Convertible Promissory Note dated November 3, 2020 by and between the Company and Streeterville Capital LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on November 4, 2020.)
10.44	Membership Interest Purchase Agreement dated November 12, 2020 by and between Al Yousuf, LLC and Edisonfuture Inc. (incorporated by reference to Exhibit 99.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on November 13, 2020.)
10.45	Placement Agency Agreement dated December 3, 2020 between the registrant and co-placement agents therein (incorporated by reference to Exhibit 1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on December 4, 2020.)
10.46	Form of Securities Purchase Agreement by and between the Company and the investors (incorporated by reference to Exhibit 4.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on December 4, 2020.)
10.47	Securities Purchase Agreement dated February 1, 2021 between the registrant and Streeterville Capital LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on February 2, 2021.)
10.48	Form of Convertible Promissory Note dated February 1, 2021 between the registration and Streeterville Capital LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on February 2, 2021.)
10.49	Placement Agency Agreement dated February 8, 2021 between the Company and Co-placement Agents therein (incorporated by reference to Exhibit 1.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on February 11, 2021.)
10.50	Form of Securities Purchase Agreement dated as of February 8, 2021 by and between the Company and investors (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on February 11, 2021.)
10.51	Asset Purchase and Sale Agreement by and between Petersen-Dean, Inc., Beachhead Roofing & Supply, Inc., California Equipment Leasing Association, Inc., Solar 4 America, Inc., Fences 4 America, Inc., James Petersen Industries, Inc., PD Solar, Inc., Sonoma Roofing Services, Inc., Petersen Roofing and Solar, LLC, Petersen Dean Texas, Inc., Red Rose, Inc., Roofs 4 America, Inc., Tri-Valley Supply, Inc., Petersen Dean Roofing and Solar Systems, Inc., TD Venture Fund, LLC ("Debtor"), and Solarjuice American, Inc. ("Buyer") (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on March 4, 2021.)
10.52	Invoice Discounting Agreement dated on April 19, 2018 by and between Scottish Pacific (BFS) Pty Limited and Solar Juice Pty Ltd. (incorporated by reference to Exhibit 4.85 to our Annual Report on Form 20-F Amendment 1 for the year ended December 31, 2020, filed with the Securities and Exchange Commission on October 29, 2021).
10.53	Amendment to Convertible Promissory Note dated on December 10, 2019 between SPI Energy Co., Ltd. and ILIAD RESEARCH AND TRADING, L.P. (incorporated by reference to Exhibit 5.56 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020).

Exhibit Number	Description of Document
10.54	Securities Purchase Agreement dated as of June 9, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on June 10, 2021.)
10.55	Form of Convertible Promissory Note dated June 9, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on June 10, 2021.)
10.56	Securities Purchase Agreement dated as of September 30, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on October 4, 2021.)

10.57	Form of Convertible Promissory Note dated September 30, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on October 4, 2021.)
10.58	Securities Purchase Agreement dated as of November 12, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on November 15, 2021.)
10.59	Form of Convertible Promissory Note dated November 12, 2021 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 6-K filed with the Securities and Exchange Commission on November 15, 2021.)
10.60	cSecurities Purchase Agreement dated as of April 8, 2022 by and between the Company and Streeterville Capital, LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 11, 2022.)
10.61	Purchase Agreement dated as of December 22, 2022 by and between the Company and Hoong Khoeng Cheong (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on December 23, 2022.)
10.62	Purchase Agreement dated as of December 22, 2022 by and between the Company and LDK New Energy Holding Limited (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed with the Securities and Exchange Commission on December 23, 2022.)
14	Code of Business Conduct and Ethics of the Registrant (incorporated by reference to Exhibit 11.1 of our Annual Report on Form 20-F (file No. 005-78703) filed with the Securities and Exchange Commission on May 17, 2016)
16.1	Letter from KPMG Huazhen LLP (incorporated by reference to Exhibit 99.1 to our Annual Report on Form 20-F for the year ended December 31, 2017, as amended, filed with the Securities and Exchange Commission on December 11, 2018)
21*	List of Subsidiaries
23.1*	Consent of Independent Registered Public Accounting Firm-MarcumAsia LLP
31.1**	Certification of the Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2**	Certification of the Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certification of Principal Executive Officer and Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Exhibit Number	Description of Document
99.1	Form of Audit Committee Charter (incorporated by reference to Exhibit 99.2 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020.)
99.2	Form of Compensation Committee Charter (incorporated by reference to Exhibit 99.3 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020.)
99.3	Form of Nominating and Corporate Governance Committee Charter (incorporated by reference to Exhibit 99.4 to our Annual Report on Form 20-F for the year ended December 31, 2019, filed with the Securities and Exchange Commission on June 29, 2020.)
101.INS*	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith

** Furnished herewith

ITEM 16 Form 10-K Summary

None.

SIGNATURES

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

Date: April 14, 2023

By: /s/ Xiaofeng Peng
 Name: Xiaofeng Peng
 Title: Chief Executive Officer and Executive Chairman

Date: April 14, 2023

By: /s/ Janet Chen
 Name: Janet Chen
 Title: Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following person on behalf of the Registrant and in the capacities and on the dates indicated.

Dated: April 14, 2023

By: /s/ Xiaofeng Peng
 Name: Xiaofeng Peng
 Title: Chief Executive Officer and Chairman
 (Principal Executive Officer)

Date: April 14, 2023

By: /s/ Janet Chen
 Name: Janet Chen
 Title: Chief Financial Officer
 (Principal Accounting and Financial Officer)

Dated: April 14, 2023

By: /s/ Maurice Ngai g
 Name: Maurice Ngai
 Title: Director

Dated: April 14, 2023

By: /s/ HoongKhoeng Cheong
 Name: HoongKhoeng Cheong
 Title: Director

Dated: April 14, 2023

By: /s/ Lu Qing
 Name: Lu Qing
 Title: Director

Dated: April 14, 2023

By: /s/ Jing Zhang
 Name: Jing Zhang
 Title: Director

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
SPI Energy Co., Ltd.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of SPI Energy Co., Ltd. (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of operations, comprehensive loss, equity and cash flows for each of the two years in the period ended December 31, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

Explanatory Paragraph – Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 2, the Company has a significant working capital deficit, has incurred significant losses and needs to raise additional funds to sustain its operations. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

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

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

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

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Convertible Bonds and Derivative liability

Critical Audit Matter Description

As described in Note 14 to the Company's consolidated financial statements, the redemption feature of the Company's outstanding convertible bonds issued to Streeterville Capital, LLC was modified to be that the redemption conversion price would be 80% of the lowest closing trade price in the 10 trading days immediately preceding the applicable redemption date and the Company determines that this modified redemption feature meets the definition of a derivative and the Company estimates a fair value of the derivative liability using the Monte Carlo Simulation.

We identified the accounting of the Company's convertible bonds and derivative liability as a critical audit matter due to the significant judgment required in determining the liability component of the related convertible bonds as well as the balance sheet classification of the elements of these convertible bonds. Auditing these elements involved especially challenging auditor judgment due to the nature and extent of audit effort required to address these matters, including the extent of specialized skill or knowledge needed.

How the Critical Audit Matter was Addressed in the Audit

Our principal audit procedures included, among others:

- evaluating relevant contract terms and conditions of the convertible notes agreements in relation to the appropriate accounting literature;
- involving personnel with specialized knowledge in valuation to review the valuation of the derivative liability in convertible bonds made by the Company;
- evaluating the management's assessment on the accounting treatment;
- assessing the adequacy of the Company's disclosures included in Note 11 and Note 14 to the consolidated financial statements.

Impairment of long-lived assets

Critical Audit Matter Description

Long-lived assets, primarily, property and equipment, project assets, intangible assets, and operating lease right-of-use assets, comprise a significant amount of the Company's total assets. The carrying values of these assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable. An impairment loss is recorded in the period in which it is determined that the carrying amount is not recoverable in the amount that equals to the excess of their carrying value over the fair value.

As described in Note 7 and Note 21 to the Company's consolidated financial statements, the Company identified indicators of impairment for long-lived assets and recorded total impairment charges of \$1.6 million for right-of-use assets in its renewable energy solutions segment and \$0.4 million for its project assets in its solar projects development segment for the year ended December 31, 2022. Management applied significant judgment in estimating the undiscounted cash flow of future revenues and costs derived from roofing and solar energy systems installation and solar projects development and the determination of the fair value. These forecasts require assumptions about the demand for its products and services, future market conditions and regulatory developments.

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We identified impairment of long-lived assets as a critical audit matter because of the significant estimates and assumptions management makes to estimate the recoverable amount and fair value of long-lived assets. This required a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of Management's estimates and assumptions related to forecasts of future undiscounted cash flows, and assessing the audit evidence is also complex.

How the Critical Audit Matter was Addressed in the Audit

Our principal audit procedures included, among others:

- evaluating the Company's impairment assessment methodology;
- assessing the reasonableness of Management's forecasts by testing the completeness, accuracy, and relevance of underlying data, and evaluating the reasonableness of the assumptions used in the management's forecasts;
- assessing the adequacy of the Company's impairment disclosures included in Note 21 to the consolidated financial statements.

/s/ Marcum Asia CPAs LLP

Marcum Asia CPAs LLP

We have served as the Company's auditor since 2018 .

New York, New York
April 14, 2023

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SPI ENERGY CO., LTD.
CONSOLIDATED BALANCE SHEETS
(In thousands, except for share and per share data)

	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 3,533	\$ 9,765
Restricted cash	6,743	8,080
Accounts receivable, net	22,691	22,599
Contract asset	1,403	1,621
Inventories	28,987	23,242
Project assets	10,634	8,946
Prepaid expenses and other current assets, net	7,633	9,584
Amount due from related parties	332	230
Total current assets	81,956	84,067
Intangible assets, net	2,587	3,433
Goodwill	4,896	4,896
Restricted cash, noncurrent	711	—

Other receivable, noncurrent	234	268
Property and equipment, net	41,556	35,750
Project assets, noncurrent	14,918	15,969
Investment in affiliates	69,606	69,606
Operating lease right-of-use assets	14,152	13,923
Deferred tax assets, net	479	168
Total assets	\$ 231,095	\$ 228,080
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 30,405	\$ 25,612
Accrued liabilities	15,972	10,094
Income taxes payable	3,511	1,684
Advance from customers	8,634	4,210
Deferred income	503	714
Short-term borrowings and current portion of long-term borrowings	10,064	9,120
Amount due to an affiliate	10,548	10,603
Convertible bonds, net of unamortized debt discount	42,676	48,603
Derivative liability	3,406	—
Accrued warranty reserve	754	628
Operating lease liabilities, current	1,607	1,351
Consideration payable	61,617	61,219
Total current liabilities	189,697	173,838
Long-term borrowings, excluding current portion	6,597	12,800
Deferred tax liabilities, net	2,673	2,970
Operating lease liabilities, non-current	14,256	12,522
Total liabilities	213,223	202,130
Equity:		
Ordinary shares, par \$0.0001, 500,000,000 shares authorized, 30,292,960 and 25,352,060 shares issued and outstanding as of December 31, 2022 and 2021, respectively	3	3
Additional paid in capital	719,697	695,073
Accumulated other comprehensive loss	(36,697)	(35,257)
Accumulated deficit	(670,811)	(637,390)
Total equity attributable to the shareholders of SPI Energy Co., Ltd.	12,192	22,429
Noncontrolling interests	5,680	3,521
Total equity	17,872	25,950
Total liabilities and equity	\$ 231,095	\$ 228,080

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

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SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except for share and per share data)

	2022	2021
Net revenues	\$ 177,518	\$ 161,993
Cost of revenue	163,033	151,373
Gross profit	14,485	10,620
Operating expenses:		
General and administrative	35,554	41,780
Sales, marketing and customer service	5,027	7,581
Impairment charges on long-lived assets	1,955	—
Provision for credit losses	581	2,735
Total operating expenses	43,117	52,096
Operating (loss) income	(28,632)	(41,476)
Other income (expense):		
Interest expense, net	(7,194)	(5,137)
Loss on extinguishment of convertible bonds	(2,634)	—
Change in fair value of derivative liability	(183)	67
Net foreign exchange gain	2,564	2,694
Forgiveness of PPP Loan	5,094	205
Others	(746)	267
Total other expenses, net	(3,099)	(1,904)
Net loss before income taxes	(31,731)	(43,380)
Income tax expense	1,992	1,454
Net loss	\$ (33,723)	\$ (44,834)
Less: Net (loss) income attributable to noncontrolling interests	(302)	657
Net loss attributable to shareholders of SPI Energy Co., Ltd.	\$ (33,421)	\$ (45,491)
Net loss per ordinary share:		
Basic and Diluted	\$ (1.3)	\$ (1.9)
Weighted average shares outstanding		
Basic and Diluted	26,513,193	24,192,815

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

SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)

	For the Years Ended December 31,	
	2022	2021
Net loss	\$ (33,723)	\$ (44,834)
Other comprehensive income (loss), net of tax of nil:		
Foreign currency translation loss	(2,134)	(2,575)
Total comprehensive loss	(35,857)	(47,409)
Comprehensive (loss) income attributable to noncontrolling interests	(996)	392
Comprehensive loss attributable to shareholders of SPI Energy Co., Ltd.	<u>\$ (34,861)</u>	<u>\$ (47,801)</u>

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

SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF EQUITY
(In thousands, except for share and per share data)

	Ordinary Shares		Additional Paid- In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Equity Attributable to Shareholders of SPI Energy Co., Ltd.	Noncontrolling Interests	Total Equity
	Shares*	Amount						
Balances at December 31, 2020	<u>22,340,689</u>	<u>\$ 2</u>	<u>\$ 670,101</u>	<u>\$ (591,899)</u>	<u>\$ (32,947)</u>	<u>\$ 45,257</u>	<u>\$ 3,129</u>	<u>\$ 48,386</u>
Net loss				(45,491)	(2,310)	(45,491)	657	(44,834)
Foreign currency translation losses	–	–	–	–	(2,310)	(2,310)	(265)	(2,575)
Issuance of ordinary shares in offering	1,365,375	1	13,591	–	–	13,592	–	13,592
Issuance of restricted stock units to employees	184,000	–	1,196	–	–	1,196	–	1,196
Redemption of convertible debt with shares	1,075,169	–	4,375	–	–	4,375	–	4,375
Issuance of ordinary shares for acquisition of Phoenix	71,327	–	–	–	–	–	–	–
Stock based compensation			4,593	–	–	4,593	–	4,593
Exercise of employee share option	25,000	–	91	–	–	91	–	91
Exercise of share option of Lighting Charm Limited	285,500	–	1,092	–	–	1,092	–	1,092
Issuance of ordinary shares for purchasing services	5,000	–	34	–	–	34	–	34
Balances at December 31, 2021	<u>25,352,060</u>	<u>\$ 3</u>	<u>\$ 695,073</u>	<u>\$ (637,390)</u>	<u>\$ (35,257)</u>	<u>\$ 22,429</u>	<u>\$ 3,521</u>	<u>\$ 25,950</u>

(continued)

SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF EQUITY
(In thousands, except for share and per share data)

	Ordinary Shares		Additional Paid- In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Shareholders of SPI Energy Co., Ltd.	Noncontrolling Interests	Total Equity
	Shares*	Amount						
Net loss	—	—	—	(33,421)	—	(33,421)	(302)	(33,723)
Foreign currency translation losses	—	—	—	—	(1,440)	(1,440)	(694)	(2,134)
Issuance of restricted stock units to employees	229,888	—	623	—	—	623	—	623
Settlement of convertible debt with shares	3,216,846	—	8,659	—	—	8,659	—	8,659
Redemption of convertible debt with shares	301,724	—	535	—	—	535	—	535
Issuance of ordinary shares in private placement	1,150,000	—	1,161	—	—	1,161	—	1,161
Issuance of ordinary shares for settlement of consideration related to Acquisition of Phoenix	42,442	—	—	—	—	—	—	—
Issuance of ordinary shares of Phoenix in its initial public offering ("Phoenix IPO")	—	—	11,344	—	—	11,344	2,094	13,438
Issuance of unrestricted shares of Phoenix to the managements of Phoenix	—	—	—	—	—	—	793	793
Exercise of vested options of Phoenix by employees of Phoenix	—	—	—	—	—	—	138	138
Issuance of common stock of Phoenix as commitment fee for standby equity purchase agreement of Phoenix	—	—	—	—	—	—	100	100
Issuance of common stock of Phoenix for standby equity purchase agreement of Phoenix	—	—	—	—	—	—	30	30
Share-based compensation expense	—	—	2,302	—	—	2,302	—	2,302
Balances at December 31, 2022	30,292,960	\$ 3	\$ 719,697	\$ (670,811)	\$ (36,697)	\$ 12,192	\$ 5,680	\$ 17,872

The accompany notes are an integral part of these consolidated financial statements

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SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	For the Years Ended December 31,	
	2022	2021
Cash flows from operating activities:		
Net loss	\$ (33,723)	\$ (44,834)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	3,226	3,344
Amortization	936	3,931
Loss on extinguishment of convertible bonds	2,634	—
Change in fair value of derivative liability	183	(67)
Write down for inventory	148	983
(Reversal of) Provision for doubtful accounts	(993)	2,735
Provision for prepaid and other current assets	1,574	—
Impairment charges on long-lived assets	1,955	—
Share-based compensation expense	3,095	5,789
Restricted stock units issued to employees	623	—
Amortization of right-of-use assets	2,572	1,768
Amortization of debt discount on convertible bonds	1,396	540
Change in deferred taxes	(468)	(1,082)
Loss on disposal of property and equipment	(707)	(57)
Non-cash interest expense	461	—
Accrual of warranty reserve	126	99
Gain on forgiveness of PPP loan	(5,094)	(205)
Other non-cash expense	100	34
Changes in operating assets and liabilities		
Accounts receivable	338	1,185
Amount due from related parties	(102)	(36)
Project assets	(1,835)	(6,008)
Inventories	(6,772)	(7,065)
Prepaid expenses and other assets	410	(4,565)
Accounts payable	5,740	8,547
Advances from customers	4,213	3,628

Income taxes payable	1,827	1,653
Accrued liabilities and other liabilities	4,567	3,971
Lease liability	(2,396)	(1,772)
Net cash used in operating activities	(15,966)	(27,484)
Cash flows from investing activities:		
Proceeds from disposal of subsidiaries	110	453
PDI asset purchase (Note 4)	—	(8,003)
Acquisitions of property and equipment	(8,267)	(1,316)
Net cash used in investing activities	(8,157)	(8,866)
Cash flows from financing activities:		
Proceeds from issuance of ordinary shares	1,161	13,591
Proceeds from issuance of convertible note	2,000	16,000
Repayment of convertible notes	—	(13,935)
Proceeds from exercise of employee stock options	—	91
Proceeds from exercise of options issued to Lighting Charm Limited during disposition of SPI China	—	1,091
Proceeds from exercise of Phoenix options	138	—
Proceeds received from standby equity purchase agreement of Phoenix	30	—
Proceeds from IPO of Phoenix	13,438	—
Proceeds from line of credit and loans payable	141,545	175,101
Repayments of line of credit and loans payable	(141,008)	(173,514)
Net cash generated from financing activities	17,304	18,425
Effect of exchange rate changes on cash	(39)	(4,012)
Decrease in cash, cash equivalents and restricted cash	(6,858)	(21,937)
Cash, cash equivalents and restricted cash at beginning of year	17,845	39,782
Cash, cash equivalents and restricted cash at end of year	\$ 10,987	\$ 17,845

(continued)

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	For the Years Ended December 31,	
	2022	2021
Reconciliation of cash, cash equivalents, and restricted cash to the consolidated balance sheets		
Cash and cash equivalents	3,533	9,765
Restricted cash	6,743	8,080
Restricted cash, noncurrent	711	—
Total cash, cash equivalents, and restricted cash	\$ 10,987	\$ 17,845
Supplemental cash flow information:		
Interest paid	\$ 2,410	\$ 1,236
Income tax paid	\$ 484	\$ 58
Non-cash activities:		
Derivative liabilities recorded as debt discount	\$ 3,407	\$ —
Right of use assets obtained in exchange for operating lease obligations	\$ 3,450	\$ 8,502
Purchase of equipment on credit	1,311	—
Reclassification from project asset to property and equipment	681	3,683
Settlement of convertible bond by issuing ordinary shares	8,659	—
Redemption of convertible bond by issuing ordinary shares	\$ 535	\$ 4,375

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

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SPI ENERGY CO., LTD.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in US\$ thousands, except share and per share data)

1. Description of Business and Organization

Description of Business

SPI Energy Co., Ltd. ("SPI Energy" or the "Company") and its subsidiaries (collectively the "Group") is engaged in the provision of photovoltaic ("PV"), roofing and solar energy systems installation, and electric vehicle ("EV") solutions for business, residential, government and utility customers and investors. The Group develops solar PV projects which are either sold to third party operators or owned and operated by the Group for selling of electricity to the grid in multiple countries in Asia, North America and Europe. In Australia, the Group primarily sells solar PV components to retail customers and solar project developers. The Group started to engage in sales and leasing of new zero-emission EVs in U.S. from 2020 and engage in roofing and solar energy systems installation in U.S. from 2021. The Group also started to assemble solar modules for sale in U.S. in 2022.

Organization

The major subsidiaries of the Group as of December 31, 2022 are summarized as below:

Major Subsidiaries	Abbreviation	Location
SolarJuice Co., Ltd	SolarJuice	Cayman
Solar Juice Pty Ltd.	SJ Australia	Australia
Solarjuice American Inc.	SJ US	United States
Solar4america Technology Inc. (formerly, Solarjuice Technology Inc.)	SJT	United States
Italsolar S.r.l.	SPI Italy	Italy
SPI Solar Japan G.K.	SPI Japan	Japan
Solar Power Inc UK Service Limited	SPI UK	United Kingdom
SPI Solar Inc.	SPI US	United States
Helioxitio S.A.	Helioxitio	Greece
Heliohrisi S.A.	Heliohrisi	Greece
Thermi Sun S.A.	Thermi Sun	Greece
Edisonfuture Inc.	Edisonfuture	United States
Phoenix Motor Inc.	Phoenix	United States

On January 1, 2017, the Group deconsolidated one of the major subsidiaries, Sinsin Renewable Investment Limited ("Sinsin") due to loss of control and recognized the investment in Sinsin at the carrying amount of \$69,606. Both the Group and the former shareholders of Sinsin, Sinsin Europe Solar Asset Limited Partnership and Sinsin Solar Capital Limited Partnership (collectively, the "Sinsin Group"), failed to fulfill the obligation under the share sale and purchase agreement of Sinsin, which led to that both parties filed petitions to each other. The petitions directly affected the Group's ability to effectively control Sinsin and make any direct management decisions or have any direct impact on Sinsin's policies, operations or assets without the agreement of Sinsin Group. On October 29, 2020, an arbitration decision was made in Malta that the Group will need to pay the unpaid consideration of EUR 38,054, together with interest at 6% accruing from November 20, 2015 on half of the unpaid consideration and from June 30, 2016 on the remaining half of the unpaid consideration to the date of eventual payment. The Group filed an application for appeals but was turned down by the court of Malta on November 12, 2021. The Group furtherly filed an application of retrial and suspension of the enforcement of the awards but was rejected by the court of Malta on March 30, 2022. On November 2, 2022, Sinsin filed an action to confirm these arbitral awards pursuant to the Convention on the Recognition and Enforcement of Foreign Arbitral Awards of June 10, 1958 ("New York Convention") as implemented by the Federal Arbitration Act ("FAA") before U.S. District Court Eastern District of California, and the management is in progress of negotiation with Sinsin to achieve a settlement to suspend the enforcement of the arbitration decision (Note 22(b)). As of December 31, 2022 and 2021, investment in Sinsin was \$69,606, and there was no impairment for the years ended December 31, 2022 and 2021. Consideration payable, including accrued interest and litigation fees payable, was \$61,617 and \$61,219 as of December 31, 2022 and 2021, respectively. The interest expense accrued on the unpaid consideration was \$2,843 and \$2,702 for the years ended December 31, 2022 and 2021, respectively.

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On June 10, 2022, Phoenix Motor Inc. ("Phoenix"), the parent company of Phoenix Cars LLC and Phoenix Motorcars Leasing LLC, completed its initial public offering ("IPO") and Phoenix's shares have been listed on NASDAQ under the stock code "PEV" ("Phoenix IPO"). Phoenix issued 2,100,000 ordinary shares at \$7.5 per share. Net proceeds from the Phoenix IPO after deducting underwriting commissions, share issuance costs and offering expenses amounted to \$13,438.

2. Going concern

The Group has recurring losses from operations. The Group has incurred a net loss of \$ 33,723 during the year ended December 31, 2022. As of December 31, 2022, the Group had a working capital deficit of \$107,741 and the cash flow used in the operation activities for the year ended December 31, 2022 was \$15,966. These conditions raise substantial doubt about the Company's ability to continue as a going concern.

For the next 12 months from the issuance date of these consolidated financial statements, the Group plans to continue implementing various measures to boost revenue and control the cost and expenses within an acceptable level. Such measures include: 1) negotiate with potential buyers on PV solar projects; 2) negotiate for postponing of convertible bond payments; 3) improve the profitability of the business in the United States; 4) proactively implement a robust capital market strategy that includes both debt and equity offerings to meet the Group's financing needs; 5) strictly control and reduce business, marketing and advertising expenses and 6) seek for certain credit facilities.

There is no assurance that the plans will be successfully implemented. If the Group fails to achieve these goals, the Group may need additional financing to repay debt obligations and execute its business plan, and the Group may not be able to obtain the necessary additional capital on a timely basis, on acceptable terms, or at all. In the event that financing sources are not available, or that the Group is unsuccessful in increasing its gross profit margin and reducing operating losses, the Group may be unable to implement its current plans for expansion, repay debt obligations or respond to competitive pressures, any of which would have a material adverse effect on the Group's business, financial condition and results of operations and may materially adversely affect its ability to continue as a going concern.

The consolidated financial statements do not include any adjustments related to the recoverability and classification of recorded assets or the amounts and classification of liabilities or any other adjustments that might be necessary should the Group be unable to continue as a going concern.

The consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The realization of assets and the satisfaction of liabilities in the normal course of business are dependent on, among other things, the Group's ability to operate profitably, to generate cash flows from operations, and to pursue financing

arrangements to support its working capital requirements.

3. Summary of Significant Accounting Policies

(a) Basis of Presentation

The consolidated financial statements of the Group are prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP").

(b) Reclassification

Certain prior year amounts in the consolidated financial statements have been reclassified to conform with the current year presentation. These reclassifications have not changed the results of operations of prior year.

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(c) Principles of Consolidation

The consolidated financial statements include the financial statements of the Group, and its subsidiaries. All material inter-Group transactions and balances have been eliminated upon consolidation. For consolidated subsidiaries where the Group's ownership in the subsidiary is less than 100%, the equity interest not held by the Group is shown as noncontrolling interests. The Group accounts for investments over which it has significant influence but not a controlling financial interest using the equity method of accounting. The Group deconsolidates a subsidiary when the Group ceases to have a controlling financial interest in the subsidiary. When control is lost, the parent-subsidiary relationship no longer exists and the parent derecognizes the assets and liabilities of the subsidiary.

(d) Use of Estimates

The preparation of the financial statements in conformity with U.S. GAAP requires the Group to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant accounting estimates reflected in the Group's consolidated financial statements include the allowance for doubtful accounts receivable and other receivable, the impairment of goodwill and long-lived assets, fair value of derivative liability and share based compensation. Changes in facts and circumstances may result in revised estimates. The current economic environment has increased the degree of uncertainty inherent in those estimates and assumptions.

(e) Foreign Currency Translation and Foreign Currency Risk

The functional currency of the Group and subsidiaries located in the United States is the United States dollar ("US\$" or "\$"). The functional currency of the Group's subsidiaries located in the Hong Kong, Europe, United Kingdom, Japan, Canada and Australia are Hong Kong Dollar ("HKD"), EURO ("EUR"), British Pounds ("GBP"), Japanese Yen ("JPY"), Canadian Dollar ("CAD") and Australia Dollar ("AUD"), respectively. Transactions denominated in foreign currencies are re-measured into the functional currency at the rates of exchange prevailing when the transactions occur. Monetary assets and liabilities denominated in foreign currencies are re-measured into the functional currency at rates of exchange in effect at the balance sheet dates. Exchange gains and losses are included in the consolidated statements of operations.

The Group's reporting currency is the US\$. Assets and liabilities of subsidiaries, whose functional currency is not the US\$, are translated into US\$ using exchange rates in effect at each period end, and revenues and expenses are translated into US\$ at average rates prevailing during the year, and equity is translated at historical exchange rates, except for the change in retained earnings during the year which is the result of the income or loss. Gains and losses resulting from the translations of the financial statements of these subsidiaries into US\$ are recognized as other comprehensive income or loss in the consolidated statement of comprehensive loss.

(f) Fair Value of Financial Instruments

The Group measures at fair value certain of its financial and non-financial assets and liabilities by using a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. Fair value is 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, essentially an exit price, based on the highest and best use of the asset or liability. The levels of the fair value hierarchy are:

- Ŷ Level 1 — Quoted market prices in active markets for identical assets or liabilities.
- Ŷ Level 2 — Significant other observable inputs (e.g., quoted prices for similar items in active markets, quoted prices for identical or similar items in markets that are not active, inputs other than quoted prices that are observable, such as interest rate and yield curves, and market-corroborated inputs).
- Ŷ Level 3 — Unobservable inputs in which there is little or no market data, which require the reporting unit to develop its own assumptions.

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The Group uses quoted market prices to determine the fair value when available. If quoted market prices are not available, the Group measures fair value using valuation techniques that use, when possible, current market-based or independently-sourced market parameters, such as interest rates and currency rates.

(g) Business Combination

Business combinations are recorded using the acquisition method of accounting and, accordingly, the acquired assets and liabilities are recorded at their fair market value at the date of acquisition. Any excess of acquisition cost over the fair value of the acquired assets and liabilities, including identifiable intangible assets, is recorded as goodwill. The Group charges acquisition related costs that are not part of the purchase price

consideration to general and administrative expenses as they are incurred. Those costs typically include transaction and integration costs, such as legal, accounting, and other professional fees.

The Group evaluates whether a transaction should be accounted for as an acquisition and/or disposal of a business versus assets. In order for a purchase to be considered an acquisition of a business, and receive business combination accounting treatment, the set of transferred assets and activities must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. If substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets, then the set of transferred assets and activities is not a business. The adoption of this standard requires future purchases to be evaluated under the new framework.

(h) Asset Acquisition

When the Group acquires other entities, if the assets acquired and liabilities assumed do not constitute a business, the transaction is accounted for as an asset acquisition. Assets are recognized based on the cost, which generally includes the transaction costs of the asset acquisition, and no gain or loss is recognized unless the fair value of noncash assets given as consideration differs from the assets' carrying amounts on the Group's books. If the consideration given is not in the form of cash (that is, in the form of noncash assets, liabilities incurred, or equity interest issued), measurement is based on either the cost to the acquiring entity or the fair value of the assets (or net assets) acquired, whichever is more clearly evident and, thus, more reliably measurable. The cost of a group of assets acquired in an asset acquisition is allocated to the individual assets acquired or liabilities assumed based on their relative fair value and does not give rise to goodwill.

(i) Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash accounts, interest bearing savings accounts and all highly liquid investments with original maturities of three months or less, and which are unrestricted as to withdrawal and use. There were no cash equivalents as of December 31, 2022 and 2021.

(j) Restricted Cash

Restricted cash represent bank deposits with designated use, which cannot be withdrawn without certain approval or notice.

As of December 31, 2022, the Group had restricted bank deposits of \$ 7,454, including: 1) \$5,491 restricted cash mainly established to secure the loan from East West Bank and pay the obligations of SJ Australia for debtor financing; 2) \$542 restricted cash subject to a requirement of initial project contribution from Oahu SPE 101-1 LLC; 3) \$710 restricted cash was established to secure the loan from Santander Bank; 4) \$ 461 non-current restricted cash was established to guarantee on Piraeus Bank for projects in Greece and 5) 250 non-current restricted cash deposited in an escrow account for the Phoenix IPO.

As of December 31, 2021, the Group had restricted bank deposits of \$ 8,080, including: 1) \$6,140 restricted cash mainly established to secure the loan from East West Bank and to pay the obligations of SJ Australia for debtor financing; 2) \$1,940 restricted cash subject a requirement of initial project contribution from Oahu SPE 101-1 LLC that has not been met yet.

(k) Accounts Receivable, net

The Group grants open credit terms to credit-worthy customers. Accounts receivable are primarily related to the Group's sales of PV components, revenue from roofing and solar energy systems installation, electricity revenue with PPA, sales of solar modules and sales of EVs and forklifts.

The Group maintains allowances for credit losses for estimated losses resulting from the inability of its customers to make required payments. Accounts receivable is considered past due based on its contractual terms. In establishing the allowance, management considers historical losses, the financial condition, the accounts receivables aging, the payment patterns and the forecasted information in pooling basis upon the use of the Current Expected Credit Loss Model ("CECL Model") in accordance with ASC topic 326, Financial Instruments - Credit Losses. Accounts receivable that are deemed to be uncollectible are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. There is a time lag between when the Group estimates a portion of or the entire account balances to be uncollectible and when a write off of the account balances is taken. The Group does not have any off-balance-sheet credit exposure related to its customers. Contractually, the Group may charge interest for extended payment terms and require collateral.

(l) Inventories

Inventories are stated at the lower of cost or net realizable value. The cost of raw materials is determined on the basis of weighted average cost method. The cost of finished goods is determined on the basis of weighted average and comprises direct materials, direct labor and an appropriate proportion of overhead. Net realizable value is based on estimated selling prices less selling expenses and any further costs expected to be incurred for completion. Adjustments to reduce the cost of inventory to net realizable value are made, for estimated excess, obsolescence, or impaired balances if any.

(m) Project Assets

The Group acquires or constructs PV solar power systems ("solar system") that are (i) held for development and sale or (ii) held for the Group's own use to generate income or return from the use of the solar systems. Solar systems are classified as either held for development and sale within "project assets" or as held for use within "property and equipment" based on the Group's intended use of solar systems. The Group determines the intended use of the solar systems upon acquisition or commencement of project construction.

Classification of the solar systems affects the accounting and presentation in the consolidated financial statements. Transactions related to the solar systems held for development and sale within "project assets" are classified as operating activities in the consolidated statements of cash flows and reported as sales and costs of goods sold in the consolidated statements of operations upon the sale of the solar systems and fulfillment of the relevant recognition criteria. Incidental electricity income generated from the solar systems held for development and sale prior to the sale of the projects is recorded in other income (loss) in the consolidated statement of operations. The solar systems held for use within "property and equipment" are used by the Group in its operations to generate income or a return from the use of the assets. Income generated from the solar systems held for use are included in net revenues in the consolidated statement of operations. The costs to construct solar systems intended to be held for own use are capitalized and reported within property and equipment on the consolidated balance sheets and are presented as cash outflows from investing activities in the consolidated statements of cash flows. The proceeds from disposal of solar systems classified as held for own use are presented as cash inflows from investing activities within the consolidated statements of cash flows. A net gain or loss upon the disposal of solar

systems classified as held for own use is reported in other income (loss) in the consolidated statement of operation.

Solar systems costs consist primarily of capitalizable costs for items such as permits and licenses, acquired land or land use rights, and work-in-process. Work-in-process includes materials and modules, construction, installation and labor, capitalized interests and other capitalizable costs incurred to construct the PV solar power systems.

The solar systems held for development and sale, named as "project assets", are reported as current assets on the consolidated balance sheets when upon completion of the construction of the solar systems, the Group initiates a plan to actively market the project assets for immediate sale in their present condition to potential third party buyers subject to terms that are usual and customary for sales of these types of assets and it is probable that the project assets will be sold within one year. Otherwise, the project assets are reported as noncurrent assets. No depreciation expense is recognized while the project assets are under construction or classified as held for sale.

For solar systems held for development and sale, named as "project assets", the Group considers a project commercially viable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed. The Group also considers a partially developed or partially constructed project commercially viable if the anticipated selling price is higher than the carrying value of the related project assets plus the estimated cost to completion. The Group considers a number of factors, including changes in environmental, ecological, permitting, market pricing or regulatory conditions that affect the project. Such changes may cause the cost of the project to increase or the selling price of the project to decrease. The Group records an impairment loss of the project asset to the extent the carrying value exceed its estimated recoverable amount. The recoverable amount is estimated based on the anticipated sales proceeds reduced by estimated cost to complete such sales. Subsequent reversal of a previously recognized impairment loss is prohibited once the measurement of that loss is recognized.

If the Group's intended use of solar systems changed from held for development and sale within "project assets" to held for use within "property and equipment", the solar systems should be measured in accordance with ASC 360-10-35-44 at the lower of (1) its carrying amount before the asset was classified as held for development and sale, adjusted for any depreciation or amortization expense that would have been recognized had the assets continued to be classified as held for use, or (2) the fair value at the date of the subsequent decision not to sell. Any adjustment to the carrying amount based on reclassifying the solar systems to held for use within "property and equipment" should be reflected in the income statement within continuing operations in the period the decision is made not to sell.

(n) Property and Equipment, net

The Group accounts for its property and equipment at cost, less accumulated depreciation and any impairment. Cost includes the prices paid to acquire or construct the assets, interest capitalized during the construction period and any expenditure that substantially extends the useful life of an existing asset. The Group expenses repair and maintenance costs when they are incurred. Depreciation is recorded on the straight-line method based on the estimated useful lives of the assets as follows:

Furniture, fixtures and equipment	5, 7 or 10 years
Automobile	3, 5 or 7 years
Bitcoin mining equipment	3 years
Leasehold improvements	The shorter of the estimated life or the lease term
PV solar system	20 or 25 years
Plant equipment	7 years

(o) Intangible Assets other than Goodwill, net

Intangible assets consist of customer relationships, technology, patents and other. Amortization is recorded on the straight-line method based on the estimated useful lives of the assets.

(p) Impairment of Long-lived Assets

The Group's long-lived assets include property and equipment, project assets, right-of-use assets and other intangible assets with finite lives. The Group evaluates long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group be tested for possible impairment, the Group first compare undiscounted cash flows expected to be generated by that asset or asset group from its use and eventual disposition to its carrying amount. If the carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that the carrying amount exceeds its fair value. Fair value is determined through various valuation techniques including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary. Any impairment write-downs would be treated as permanent reductions in the carrying amounts of the assets and a charge to statement of operations would be recognized. As described in Note 7 and Note 21, the Company recorded impairment on project assets and right of use assets of \$1,955 and nil during the year ended December 31, 2022 and December 31, 2021, respectively.

(q) Goodwill

Goodwill represents the excess of the purchase consideration over the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed of the acquired entity as a result of the Group's acquisitions of interests in its subsidiaries. Goodwill is not amortized but is tested for impairment on an annual basis, or more frequently if events or changes in circumstances indicate that it might be impaired. The Group has an option to first assess qualitative factors to determine whether it is necessary to perform the quantitative goodwill impairment test. In the qualitative assessment, the Group considers primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. Based on the qualitative assessment, if it is more likely than not that the fair value of each reporting unit is less than the carrying amount, the quantitative impairment test is performed.

In performing the quantitative impairment test, the Group compares the fair values of each reporting unit to its carrying amount, including goodwill. If the fair value of each reporting unit exceeds its carrying amount, goodwill is not considered to be impaired. If the carrying amount of a reporting unit exceeds its fair value, the Group recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. Application of a goodwill impairment test requires significant management judgment, including the identification of reporting units, assigning assets, liabilities and goodwill to reporting units, and determining the fair value of each reporting unit. The judgment in estimating the fair value of reporting units includes estimating future cash flows, determining appropriate discount rates and making other assumptions. Changes in these estimates and assumptions could materially affect the determination of fair value for each reporting unit. There is no impairment loss recorded for the years ended December 31, 2022 and 2021.

(r) Income Taxes

The Group accounts for income taxes under the asset and liability method. 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 that includes the enactment date. A valuation allowance is recognized if it is more likely than not that some portion, or all, of a deferred tax asset will not be realized.

The Group recognizes in the consolidated financial statements the impact of a tax position, if that position is more likely than not of being sustained upon examination, based on the technical merits of the position. In evaluating whether a tax position has met the more-likely-than-not recognition threshold, management presumes that the position will be examined by the appropriate taxing authority that has full knowledge of all relevant information. In addition, a tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to be recognized in the financial statements. The tax position is measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon settlement. The Group's tax liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of the tax audits, case law developments and new or emerging legislation. Such adjustments are recognized entirely in the period in which they are identified. The Group records interest and penalties related to an uncertain tax position, if and when required, as part of income tax expense in the consolidated statements of operations. No reserve for uncertainty tax position was recorded by the Group for the years ended December 31, 2022 and 2021. The Group does not expect that the assessment regarding unrecognized tax positions will materially change over the next 12 months. The Group is not currently under examination by an income tax authority, nor have been notified that an examination is contemplated.

(s) Revenue Recognition

The Group adopted Accounting Standards Codification ("ASC") No. 606, "Revenue from Contracts with Customers" ("ASC 606" or "Topic 606"). The Group's accounting practices under ASC Topic 606 are as follows:

The Group generates revenue from sales of PV components, roofing and solar energy systems installation, electricity revenue with Power Purchase Agreements ("PPAs"), sales of PV project assets, sales and leasing of EV and others for the years ended December 31, 2022 and 2021.

Sale of PV components

Revenue on sale of PV components includes one performance obligation of delivering the products and the revenue is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon shipment or acceptance of the customer depending on the terms of the underlying contracts.

Revenue from roofing and solar energy systems installation

Revenue from roofing and solar energy system installation is recognized over time.

For revenue from solar energy system installation, the Group's only performance obligation is to design and install a customized solar energy system, or to reinstall the customer's existing solar energy system. For revenue from roofing, the Group's only performance obligation is to design and build the roof system per customer specifications.

The Group's roofing projects involve the construction of a specific roof systems in accordance with each customer's selection; the Group's solar energy system installations involve solar modules being retrofitted to existing consumer roofs using rails, then connected to the utility using an inverter system. For both solar energy system installation and roofing, typically jobs are completed within three months, the specific timing depends on the size of the job and the complexity of the job site, and the contract price includes all material and labor needed, and payments are collected based on specific milestones.

The Group provides solar energy systems and roofing installation for various customers, such as homeowners and real estate developers, but the design and installation for each customer differs substantially on the basis of each customer's needs and the type of shingle or roof that is placed with the solar energy system. The asset consequently has no alternative use to the Group because the customer specific design limits the Group's practical ability to readily direct the solar energy system to another customer. As such the Group's performance does not create an asset with an alternative use to the Group. Pursuant to the contract, the customers agree to pay for any costs, expenses and losses incurred by the Group upon termination, and therefore, revenue is recognized over time according to ASC 606-10-25-27(c).

For both solar energy system installation and roofing, all costs to obtain and fulfill contracts associated with system sales and other product sales are expensed to cost of revenue when the corresponding revenue is recognized.

The Group recognizes revenue using a cost-based input method that recognizes revenue and gross profit as work is performed based on the relationship between actual costs incurred compared to the total estimated cost of the contract, to determine the Group's progress towards contract completion and to calculate the corresponding amount of revenue and gross profit to recognize. The total estimated cost of the contract constitutes of material cost and labor cost, and are developed based on the size and specific situation of different jobs. Changes in estimates mainly due to: (i)

unforeseen field conditions that impacts the estimated workload, and (ii) change of the unit price of material or labor cost.

If the estimated total costs on any contract are greater than the net contract revenues, the Group recognizes the entire estimated loss in the period the loss becomes known.

Electricity revenue with PPAs

The Group sells energy generated by PV solar power systems under PPAs. For energy sold under PPAs, the Group recognizes revenue each period based on the volume of energy delivered to the customer (i.e., the PPAs off-taker) and the price stated in the PPAs. The Group has determined that none of the PPAs contains a lease since (i) the purchaser does not have the rights to operate the PV solar power systems, (ii) the purchaser does not have the rights to control physical access to the PV solar power systems, and (iii) the price that the purchaser pays is at a fixed price per unit of output.

Sale of PV project asset

The Group's sales arrangements for PV projects do not contain any forms of continuing involvement that may affect the revenue or profit recognition of the transactions, nor any variable considerations for energy performance guarantees, minimum electricity end subscription commitments. The Group therefore determined its single performance obligation to the customer is the sale of a completed solar project. The Group recognizes revenue for sales of solar projects at a point in time after the solar project has been grid connected and the customer obtains control of the solar project.

Revenue from sales and leasing of EV

The Group recognizes revenue from sales of EV at a point in time following the transfer of control of such products to the customer, which typically occurs upon the delivery to the customer for EV sales. The Group determined that the government grants related to sales of EV should be considered as part of the transaction price because it is granted to the EV buyer and the buyer remains liable for such amount in the event the grants were not received by the Group or returned due to the buyer violates the government grant terms and conditions.

EV leasing revenue includes revenue recognized under lease accounting guidance for direct leasing programs. The Group accounts for these leasing transactions as operating leases under ASC 842 Leases, and revenues are recognized on a straight-line basis over the contractual term.

Other revenue

Other revenue mainly consist of sales of self-assembled solar modules, sales of component and charging stations, sales of forklifts, engineering and maintenance service, shipping and delivery service, sales of pre-development solar projects and others. Other revenues are recognized at a point in time following the transfer of control of such service or products to the customer, which typically occurs upon shipment of product or acceptance of the customer depending on the terms of the underlying contracts.

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Disaggregation of revenues

The following table illustrates the disaggregation of revenue by revenue stream for the years ended December 31, 2022 and 2021:

By revenue stream	For the year ended December 31, 2022					
	Sales of PV components	Revenue from roofing and solar systems installation	Electricity revenue with PPAs	Revenue from sales and leasing of EV	Others	Total
Australia	\$ 132,025	\$ —	\$ —	\$ —	\$ 929	\$ 132,954
Japan	—	—	—	—	80	80
Italy	—	—	1,019	—	—	1,019
United States	1,905	25,899	108	2,340	8,615	38,867
United Kingdom	—	—	2,053	—	—	2,053
Greece	—	—	2,545	—	—	2,545
Total	\$ 133,930	\$ 25,899	\$ 5,725	\$ 2,340	\$ 9,624	\$ 177,518

By revenue stream	For the year ended December 31, 2021					
	Sales of PV components	Revenue from roofing and solar systems installation	Electricity revenue with PPAs	Revenue from sales and leasing of EV	Others	Total
Australia	\$ 123,138	\$ —	\$ —	\$ —	\$ 1,110	\$ 124,248
Japan	—	—	—	—	65	65
Italy	—	—	690	—	—	690
United States	—	29,028	—	2,336	1,729	33,093
United Kingdom	—	—	1,211	—	—	1,211
Greece	—	—	2,686	—	—	2,686
Total	\$ 123,138	\$ 29,028	\$ 4,587	\$ 2,336	\$ 2,904	\$ 161,993

By timing of revenue recognition	For the year ended December 31, 2022					
	Sales of PV components	Revenue from roofing and solar systems installation	Electricity revenue with PPAs	Revenue from sales and leasing of EV	Others	Total
Goods transferred at a point in time	\$ 133,930	\$ —	\$ 5,725	\$ 1,789	\$ 9,624	\$ 151,068
Service transferred over time	—	25,899	—	—	—	25,899

On a straight-line basis under ASC 842	—	—	—	551	—	551
Total	\$ 133,930	\$ 25,899	5,725	\$ 2,340	\$ 9,624	\$ 177,518

**By timing of revenue
recognition**

	For the year ended December 31, 2021					
	<u>Sales of PV components</u>	<u>Revenue from roofing and solar systems installation</u>	<u>Electricity revenue with PPAs</u>	<u>Revenue from sales and leasing of EV</u>	<u>Others</u>	<u>Total</u>
Goods transferred at a point in time	\$ 123,138	\$ —	\$ 4,587	\$ 1,750	\$ 2,904	\$ 132,379
Service transferred over time	—	29,028	—	—	—	29,028
On a straight-line basis under ASC 842	—	—	—	586	—	586
Total	\$ 123,138	\$ 29,028	4,587	\$ 2,336	\$ 2,904	\$ 161,993

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Contract balance

The following table provides information about contract assets and contract liabilities from contracts with customers:

	December 31, 2022	December 31, 2021
Accounts receivable	\$ 22,691	\$ 22,599
Contract assets	\$ 1,403	\$ 1,621
Advance from customers	\$ 8,634	\$ 4,210

The contract assets primarily relate to the Group's rights to consideration for work completed but not billed at the reporting date, primarily for the revenue from roofing and solar energy systems installation in the United States. The contract assets are transferred to receivables when the rights become unconditional after billing is issued.

Advance from customers, which representing a contract liability, represents mostly unrecognized revenue amount received from customers. Advance from customers is recognized as (or when) the Group performs under the contract. During the years ended December 31, 2022 and 2021, the Group recognized \$4,210 and \$1,377 as revenue that was included in the balance of advance from customers at January 1, 2022 and 2021, respectively.

(t) Government Grant

The Group receives grants from government agencies related to electricity revenue with PPAs, sales and leasing of its EVs. The government grants related to electricity revenue with PPAs and the sale of EVs should be considered as part of the transaction price because it is granted to the EV buyers and the Group receives such on behalf of the buyers to settle part of the EVs purchase price. The government grant received before the Group's delivery of the EVs are recorded as deferred income and recognized as revenue when the EVs are delivered to the buyers. For the government grants the Group is entitled upon delivery of the EVs to buyers but not yet received, the Group records accounts receivable. For government grants associated with leased vehicles under operating leases, the grants are recorded in deferred income when received and are recognized to reduce the cost of revenues during useful life of leased vehicles.

For the year ended December 31, 2022 and 2021, the amount of governmental grant recognized as revenue from sales of electricity revenue with PPAs was \$3,865 and \$3,872, respectively.

For the year ended December 31, 2022 and 2021, the amount of governmental grant recognized as revenue from sales of EVs and chargers was \$895 and \$1,243, respectively.

For the year ended December 31, 2022 and 2021, the amount of governmental grant recognized as reductions of the cost of revenues for EV leasing was \$214 and \$252, respectively.

As of December 31, 2022 and 2021, the balances of government grants received were included in deferred income with amount of \$ 503 and \$714, respectively.

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(u) Warranties

Workmanship Warranty for roofing and solar energy systems installation

For the revenue from roofing and solar energy systems installation in the United States, the Group provides a workmanship warranty for 10 years to cover the quality of the Group's service. The warranty is designed to cover service defects and damages to customer properties caused by the Group's installation of the solar energy systems or roofing service. The 10-year warranty is consistent with the term provided by competitors and is provided by the Group to remain market competitive. The Group determined that its 10-year workmanship warranty constitutes an assurance-type warranty and should continue to be accounted for under ASC 460 - Guarantees, instead of a service-type warranty which should be accounted for under Topic 606. Based on historical experience and projections of warranty claims, and estimated replacement costs, the Group currently provides a reserve for the workmanship warranty based on 1% of revenues of roofing and solar energy system installation, to be periodically adjusted based on historical actual workmanship warranty expenses. The Group's workmanship warranty liability was \$429 and \$268 as of December 31, 2022 and

2021, respectively.

Product Warranty for products used in roofing and solar energy systems installation

The Group purchases products like panels and batteries from third-party manufacturers, sometimes with its "Solar4America" label and delivers the products together with its installation service. The Group receives product warranty from the manufacturers and transfers the product warranty to the clients in the builder or home improvement contracts. The product manufacturers will service their warranties by repairing or replacing the products. The workmanship warranty does not include the product warranties (panels and inverters) which are covered directly by the manufacturers.

Product Warranty for vehicles or components

The Group provides warranties on all vehicles or components sold in addition to pass through warranties from third party component suppliers. The Group accrues a warranty reserve for the products sold by the Group, which includes the Group's best estimate of the projected costs to repair or replace items under warranties. These estimates are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims. These estimates are inherently uncertain given the Group's relatively short history of sales, and changes to the Group's historical or projected warranty experience may cause material changes to the warranty reserve in the future. The Group considers the warranty provided is not providing incremental service to customers rather an assurance to the quality of the vehicle, and therefore is not a separate performance obligation and should be accounted for in accordance with ASC 460 - Guarantees. Warranty expense is recorded as a component of cost of revenues in the consolidated statements of operations. The balance of warranty reserves for vehicles or components was \$325 and \$360 as of December 31, 2022 and December 31, 2021, respectively.

(v) Cost of Revenues

Cost of sale of PV components is mainly from direct purchase price of PV components. Cost of revenue from roofing and solar energy systems installation include all direct material, labor and indirect costs related to contract performance, such as indirect labor, utility and truck rental. Costs of electricity revenue with PPAs include depreciation of solar power project assets and costs associated with operation and maintenance of the project assets. Cost of sale of PV project assets include all direct material, labor, subcontractor cost, land use right fee, and those indirect costs related to contract performance, such as indirect labor, supplies and tools. Cost of sales of EV includes direct parts, material and labor costs, manufacturing overheads, and shipping and logistics costs. Cost of leasing of EV includes the depreciation of operating lease vehicles over the lease term and other leasing related charges including vehicle insurance and upfront leasing costs. Cost of other revenue contains: 1) Cost of sales of solar modules includes direct parts, material and labor costs, manufacturing overheads, and shipping and logistics costs; 2) Cost of revenues for other revenue is mainly from shipping and logistic costs. The cost of revenue also includes inventories write-downs.

(w) Share-based Compensation

The Group's share-based payment transactions with employees, such as restricted shares and share options, are measured based on the grant-date fair value of the equity instrument granted. The fair value of the award is recognized as compensation expense, net of estimated forfeitures, over the period during which an employee is required to provide service in exchange for the award on straight line basis, which is generally the vesting period. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

(x) Derivative Instruments

The Group evaluates its convertible debt to determine if the contract or embedded component of the contract qualifies as derivatives to be separately accounted for in accordance with ASC 480, "Distinguish by Liabilities from Equity", and ASC 815, "Derivatives and Hedging". The result of this accounting treatment is that the fair value of the embedded derivative, if required to be bifurcated, is marked-to-market at each balance sheet date and recorded as a liability. The change in fair value is recorded in the consolidated statement of operations. Upon conversion or exercise of a derivative instrument, the instrument is marked to fair value at the conversion date and then that fair value is reclassified to equity.

(y) Segment Reporting

Operating segments are defined as components of a Group which separate financial information is available that is evaluated regularly by the operating decision maker in deciding how to allocate resources and assessing performance. The Group's chief operating decision maker ("CODM") is the Chairman of Board of Directors and Chief Executive Officer, Mr. Xiaofeng Peng. Based on the financial information presented to and reviewed by the CODM.

With the expansion and development of the Group's businesses, it divided its operations into three operating segments including EV business, renewable energy solutions business and solar projects development business and its remaining businesses are combined and disclosed as "Others", starting from the year ended December 31, 2021, to better align with the Group's strategic development plan.

The Group's EV business generates revenue from sales and leasing of EV, renewable energy solutions business generated revenue from sale of PV components and modules and providing roofing and solar energy systems installation service, and solar projects development business generated revenue from developing and selling or owning and operating solar projects which sell electricity to the grid in multiple countries. The Group's CODM evaluates segment performance based on the measures of revenues, costs of revenues and gross profit (loss). See Note 25 for financial information by segment.

(z) Net Loss Per Share

Basic loss per share is computed by dividing net loss attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding for the period. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders as adjusted for the effect of dilutive ordinary equivalent shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalent shares outstanding during the period. During the years ended December 31, 2022 and 2021, 516,778 and 755,300 potentially dilutive shares are excluded from the computation as their effects are anti-dilutive, respectively.

(aa) Accumulated Other Comprehensive Loss

The components of other comprehensive income or loss consist solely of foreign currency translation adjustments.

(ab) Commitments and Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. If a potential material loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, is disclosed. Legal costs incurred in connection with loss contingencies are expensed as incurred.

(ac) Leases

The Group accounts for leases under Leases (ASC Topic 842). The Group categorizes leases with contractual terms longer than twelve months as either operating or finance lease. The Group has no finance leases for any of the periods presented.

Right-of-use ("ROU") assets represent the Group's rights to use underlying assets for the lease term and lease liabilities represent the Group's obligation to make lease payments arising from the lease. Lease liabilities are recognized at the present value of the future lease payments at the lease commencement date and ROU assets are recognized at amount of lease liabilities and any prepaid lease payments. The interest rate used to determine the present value of the future lease payments is the Group's incremental borrowing rate because the interest rate implicit in the leases is not readily determinable. The incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in economic environments where the leased asset is located. The lease terms include periods under options to extend or terminate the lease when it is reasonably certain that the Group will exercise that option. The Group generally uses the base, non-cancelable, lease term when determining the ROU assets and liabilities.

Lease expense for lease payments is recognized on a straight-line basis over the lease term. The Group determines if an arrangement is a lease at inception. The lease payments under the lease arrangements are fixed. Non-lease components include payments for building management, utilities and property tax. It separates the non-lease components from the lease components to which they relate.

(ad) Recent Accounting Pronouncements

Recently adopted accounting pronouncements

In August 2020, the FASB issued ASU 2020-06, Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40). The ASU simplifies the accounting for certain financial instruments with characteristics of liabilities and equity. The FASB reduced the number of accounting models for convertible debt and convertible preferred stock instruments and made certain disclosure amendments to improve the information provided to users. In addition, the FASB amended the derivative guidance for the "own stock" scope exception and certain aspects of the EPS guidance. For public business entities that meet the definition of an SEC filer, excluding entities eligible to be smaller reporting companies as defined by the SEC, the guidance is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. The Group adopted this ASU starting from January 1, 2022 and concludes that there is no material impact on its consolidated financial statements.

In November 2021, The FASB issued ASU No. 2021-10, Government Assistance (Topic 832), Disclosures by Business Entities about Government Assistance. This guidance requires business entities to make annual disclosures about transactions with a government (including government assistance) they account for by analogizing to a grant or contribution accounting model (e.g., IAS 20, Accounting for Government Grants and Disclosure of Government Assistance). The required disclosures include the nature of the transaction, the entity's related accounting policy, the financial statement line items affected and the amounts reflected in the current period financial statements, as well as any significant terms and conditions. An entity that omits any of this information because it is legally prohibited from being disclosed needs to include a statement to that effect. The guidance is effective for financial statements issued for annual periods beginning after December 15, 2021, and early adoption is permitted. The Company adopted and applied the amendments of this ASU to its disclosures starting from January 1, 2022. The Group concludes that the application of this ASU did not have a material impact on its consolidated financial statements.

Recently issued accounting pronouncements

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting ("ASU 2020-04"), which provides elective amendments for entities that have contracts, hedging relationships and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. These amendments were effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. In January 2021, the FASB issued ASU 2021-01, Reference Rate Reform (Topic 848), to expand and clarify the scope of Topic 848 to include derivative instruments on discounting transactions. The amendments in this ASU are effective in the same timeframe as ASU 2020-04. In December 2022, the FASB issued ASU 2022-06, Reference Rate reform (Topic 848): Deferral of the Sunset Date of Topic 848, which deferred the sunset date of Topic 848, Reference Rate Reform to December 31, 2024. The Group is currently evaluating the impact this guidance will have on its consolidated financial statements.

In October 2021, the FASB issued ASU 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers ("ASU 2021-08"), which requires entities to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606, Revenue from Contracts with Customers ("ASC 606"). The update will generally result in an entity recognizing contract assets and contract liabilities at amounts consistent with those recorded by the acquiree immediately before the acquisition date rather than at fair value. ASU 2021-08 is effective on a prospective basis for fiscal years beginning after December 15, 2022, with early adoption permitted. The Group will adopt ASU 2021-08 effective January 1, 2023 and apply the guidance to subsequent acquisitions. The adoption of ASU 2021-08 will only impact the accounting for the Group's future acquisitions.

The Group does not believe other recently issued but not yet effective accounting standards, if currently adopted, would have a material effect on the consolidated balance sheets, statements of operations and cash flows.

Purchase agreements with Petersen-Dean, Inc. ("PDI")

Petersen-Dean, Inc. ("PDI") specialized in residential roofing and solar systems installations and went bankruptcy in late 2020. On January 6, 2021 and February 25, 2021 respectively, SJ US participated in two of court auctions and emerged as the highest bidder for two asset packages, one for PDI's consumer contracts and one for all remaining operating assets in the final auction, with total consideration of \$7,239 including cash consideration of \$7,725, transaction costs of \$278 and assumed liability of \$11,000, net off by accounts receivables pledged for the liability with net balance of PDI of \$11,764. Assumed liability represents that SJ US has agreed to assume up to \$11,000 of outstanding balances under the PDI factoring facility with lender LSQ Funding Group L.C. ("LSQ"), which is pledged by the accounts receivable of PDI factored as of the acquisition date. SJ US is responsible to settle the remaining part of the facility if the collection of the factored accounts receivable is not able to cover the loan balance, and if there is any excess amount on the factored accounts receivable after the LSQ loan is fully repaid, remaining factored accounts receivable will be released to SJ US. The cash consideration has been fully paid as of December 31, 2021. The acquisition is accounted as an asset acquisition according to ASC 805 since the assets purchased does not meet the definition of a business.

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5. Accounts Receivable, Net

The accounts receivable, net as of December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021
Accounts receivable	\$ 24,441	\$ 25,419
Less: Allowance for credit losses	(1,750)	(2,820)
Accounts receivable, net	<u><u>\$ 22,691</u></u>	<u><u>\$ 22,599</u></u>

The movements of allowance for credit losses are as follows:

	2022	2021
Balance as of January 1	\$ 2,820	\$ 245
Addition	1,223	2,760
Reversal	(2,216)	(25)
Written off	(59)	(150)
Foreign currency translation difference	(18)	(10)
Balance as of December 31	<u><u>\$ 1,750</u></u>	<u><u>\$ 2,820</u></u>

On March 18, 2018, SJ Australia entered into debtor finance agreements with Scottish Pacific Business Finance ("Scottish Pacific"). On February 26, 2021, SJ US entered into debtor finance agreements with LSQ, whereby LSQ provided SJ US invoice discounting facility. On December 28, 2022, SJ US settled all remaining loan balances and terminated debtor financing agreement with LSQ (see Note 13). As of December 31, 2022, all the outstanding accounts receivable of SJ Australia was pledged to Scottish Pacific for a total gross amount of \$18,074. As of December 31, 2021, all the outstanding accounts receivable of SJ Australia and SJ US was pledged to Scottish Pacific and LSQ for a total gross amount of \$18,112, respectively.

6. Inventories

Inventories as of December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021
Finished goods	\$ 22,074	\$ 17,108
Goods in transit	737	2,846
Work in process	1,529	582
Raw materials	4,647	2,706
Total inventories	<u><u>\$ 28,987</u></u>	<u><u>\$ 23,242</u></u>

During the years ended December 31, 2022 and 2021, inventories were written down by \$ 148 and \$983, respectively, to reflect the lower of cost or net realizable value.

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7. Project Assets

Project assets as of December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021
Project assets completed for sale	\$ 10,931	\$ 10,353
Project assets under development	14,621	14,562
Total project assets	<u><u>\$ 25,552</u></u>	<u><u>\$ 24,915</u></u>
Current *	\$ 10,634	\$ 8,946
Noncurrent	14,918	15,969

* The current portion of the project assets represents the carrying value of projects that are expected to be sold within 1 year.

During the years ended December 31, 2022 and 2021, impairment losses of \$ 370 and nil were recorded for certain project assets held for development and sale, respectively. The impairment provided for the year ended December 31, 2022 is mainly for the project assets located in Japan.

8. Prepaid Expenses and Other Current Assets, Net

Prepaid expenses and other current assets, net as of December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021
Deposit and prepayment, net of provision of \$ 10,090 and \$10,564, respectively (a)	\$ 6,333	\$ 7,726
Other receivable, net of provision of \$3,409 and \$2,306, respectively (b)	1,300	1,858
Total prepaid expenses and other current assets, net	\$ 7,633	\$ 9,584

(a) Deposit and Prepayment

Deposit and prepayment as of December 31, 2022 primarily include: i) purchase deposit and rent deposit of \$ 3,865 (December 31, 2021: \$2,506); ii) prepayment made to vendors to purchase PV modules, raw materials and prepaid insurance expense of \$2,468 (December 31, 2021: \$5,166).

(b) Other receivable

Other receivable as of December 31, 2022 mainly included: value-added tax recoverable of Australia of \$ 840 (December 31, 2021: \$97). Other receivable as of December 31, 2021 mainly included: operational fund lent to a third party, Tocoo Corporation with no interest bearing of \$1,389, which were fully impaired in 2022.

During the years ended December 31, 2022 and 2021, provision for prepaid and other current assets of \$ 1,574 and nil were recorded, respectively.

9. Intangible Assets, Net

Intangible assets, net as of December 31, 2022 and 2021 consisted of the following:

	<u>Useful Life (in months)</u>	<u>Gross</u>	<u>Accumulated Amortization</u>	<u>Impairment Charge</u>	<u>Net</u>
As of December 31, 2022					
Patent	57	\$ 2,700	\$ (2,700)	\$ –	\$ –
Customer Relationships	120	7,642	(5,470)	(1,430)	742
Tradename	60	1,400	(607)	–	793
Technology	60	1,574	(682)	–	892
Other	60-84	370	(210)	–	160
		\$ 13,686	\$ (9,669)	\$ (1,430)	\$ 2,587
As of December 31, 2021					
Patent	57	\$ 2,700	\$ (2,700)	\$ –	\$ –
Customer Relationships	120	7,642	(5,193)	(1,519)	930
Tradename	60	1,400	(327)	–	1,073
Technology	60	1,574	(367)	–	1,207
Other	60-84	369	(146)	–	223
		\$ 13,685	\$ (8,733)	\$ (1,519)	\$ 3,433

The customer relationship was mainly contributed by the acquisition of SJ Australia in May 2015 and assets purchased from PDI in February 2021 (see Note 4). The customer relationship with clients of SJ Australia was the key driver of the revenue, which was expected to bring further economic benefit to the Group's business, the balance of customer relationship for SJ Australia is amortized over the useful life of 10 years.

The customer relationship for SJ US mainly represented the customer contracts in process, the Company could continue the execution of the contracts to generate profit by inputting material and labor cost. As of December 31, 2022, all the contracts in process purchased have either been executed or forfeited, and the cost has been fully amortized during the year ended December 31, 2021.

The tradename and technology were contributed by the acquisition of Phoenix in the year of 2020. As tradename and technology were the key drivers of the revenue for Phoenix, which were expected to bring further economic benefit to the Group's business, the tradename and technology were separately identified as intangible assets on the acquisition date. The balances are amortized over the useful life of 5 years.

No impairment loss was provided for intangible assets for the years ended December 31, 2022 and 2021. Amortization expense for intangible assets was \$936 and \$3,931 for the years ended December 31, 2022 and 2021, respectively.

As of December 31, 2022, the estimated future amortization expense related to intangible assets is as follows:

Year ending December 31,	USD
2023	\$ 935
2024	935
2025	717
2026	–
2027 and thereafter	–

10. Property and Equipment, Net

Property and equipment, net as of December 31, 2022 and 2021 consisted of the following:

	December 31, 2022	December 31, 2021
Photovoltaic solar systems	\$ 33,354	\$ 34,487
Plant equipment	12,796	3,138
Automobile	4,344	4,673
Furniture, fixtures and equipment	2,098	2,545
Leasehold improvements	455	332
Bitcoin mining equipment	—	1,910
	53,047	47,085
Less: accumulated depreciation	(11,491)	(11,335)
	<u>\$ 41,556</u>	<u>\$ 35,750</u>

The costs of PV solar system include costs of acquiring permits, construction fees of PV solar system, costs of items installed in the PV solar system including solar panels, and other costs incurred that are directly attributable to getting the PV solar system ready for its intended use of grid connection with customer for supply of electricity. Depreciation of property and equipment was \$3,226 and \$3,344 for the years ended December 31, 2022 and 2021, respectively. No impairment loss was provided for property and equipment for the years ended December 31, 2022 and 2021.

11. Fair Value Measurement

Assets and liabilities measured at fair value on a recurring basis

As of December 31, 2022, the derivative liability was measured at fair value on a recurring basis in periods subsequent to their initial recognition using Monte Carlo Simulation model, which were classified in Level 3 of the fair value hierarchy.

The Group identified derivative instruments arising from embedded conversion features in the convertible promissory note issued to Streeterville Capital, LLC ("Streeterville") (see Note 14). The following table presents the quantitative information about the Group's Level 3 fair value measurements of derivative liability on a recurring basis in 2022, which utilize significant unobservable internally-developed inputs:

	Valuation techniques	Unobservable inputs	Range of rates
Derivative liability in 2022 related to Streeterville convertible bond	Monte Carlo Simulation	Expected term Risk-free interest rate Expected volatility Expected dividend yield	0.87-1.04 4.44%-4.63% 86.2%-87.3% 0

Derivative liability as of December 31, 2022 and 2021 is \$ 3,406 and nil respectively, with the change in fair value of \$ (183) and \$67 recorded in the consolidated statements of operations for the years ended December 31, 2022 and 2021, respectively.

Assets measured at fair value on a nonrecurring basis

The Company measures its property, equipment, and intangible assets at fair value on a nonrecurring basis whenever events or changes in circumstances indicate that the carrying value may no longer be recoverable. Goodwill is evaluated for impairment annually or more frequently if events or conditions indicate the carrying value of a reporting unit may be greater than its fair value. Impairment testing compares the carrying amount of the reporting unit with its fair value.

12. Accrued Liabilities

Accrued liabilities as of December 31, 2022 and 2021 are as follows:

	December 31, 2022	December 31, 2021
Other payable	\$ 7,825	\$ 4,294
Tax penalty payable (a)	2,780	2,780
Accrued expense	1,879	786
Other tax payables	2,387	1,086
Other accrual and payables	1,101	1,148
Total accrued liabilities	<u>\$ 15,972</u>	<u>\$ 10,094</u>

(a) Tax Penalty Payable

The tax penalty payable as of December 31, 2022 and 2021, represented the accrued tax penalty and interest since the Group was late for filing the United States Federal and State income tax returns for the years ended December 31, 2017 and 2016.

On May 27, 2019 and February 20, 2020, IRS issued a notice to the Group which assessed penalties for Federal income tax for the tax years ended December 31, 2017 and 2016 in the amount of \$1,190 and \$1,290 plus interest, respectively.

On September 6, 2021 the Group received another notice from IRS which assessed penalties for Federal income tax for the tax years ended December 31, 2017 in the amount of \$1,193 plus interest. The Group assessed it as a substation for the original letter received in 2019 as they were for the same period with same principal penalty amount with different addressee, which changed from SPI Solar Inc., a subsidiary of the Group to SPI Energy Co. Ltd and Subsidiaries, thus no additional provision of penalty was made. The Group has not received any other notices from IRS regarding the tax penalties.

13. Short-term Borrowings and Long-term Borrowings

	December 31, 2022	December 31, 2021
Debtor finance	\$ 4,580	\$ 3,677
Other short-term borrowings	5,113	5,111
Current portion of long-term borrowings	371	332
Total short-term borrowings and current portion of long-term borrowings	<u>10,064</u>	<u>9,120</u>
Long-term bank borrowings	6,818	12,366
Other long-term borrowings	150	766
Total long-term borrowings	6,968	13,132
Less: current portion of long-term borrowings	(371)	(332)
Total long-term borrowings, excluding current portion	6,597	12,800
Total borrowings	<u>\$ 16,661</u>	<u>\$ 21,920</u>

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As of December 31, 2022, the maturities of the long-term borrowings are as follows:

	USD
2023	\$ 371
2024	423
2025	474
2026	514
2027	5,052
Thereafter	134
	<u>\$ 6,968</u>

Debtor Finance

The Group's subsidiary, SJ Australia, entered into debtor finance agreements with Scottish Pacific Group Limited ("Scottish Pacific") on March 18, 2018, whereby Scottish Pacific provided SJ Australia invoice discounting facility with a limit of 80% of outstanding invoices, at service fee charge of 0.13% based on the invoices processed, and discount fee charge of margin percentage of 1.1% above reference rate (reference rate is around 7.86% and 6.76% during 2022 and 2021 respectively based on the average daily debtor finance balance). The accounts receivable collection of SJ Australia was automatically transferred to Scottish Pacific for the debtor finance repayment at the end of each workday.

The Group's subsidiary, SJ US, entered into debtor finance agreement with LSQ on February 24, 2021, whereby LSQ provided SJ US invoice discounting facility with a limit of 85% of outstanding invoices, at funds usage daily fee of 0.0222% to 0.0333% per day based on the average amount of balance. LSQ shall maintain a reserve account from which to make advances to SJ US. Debtors of SJ US will pay directly to the account established by LSQ for repayment. On December 28, 2022, SJ US settled all remaining loan balances and terminated debtor financing agreement with LSQ.

PPP Loan

On May 5, 2020, Phoenix was granted a loan from Zions Bancorporation, N.A. dba California Bank & Trust in the aggregate amount of \$ 551, pursuant to the Paycheck Protection Program (the "PPP") under Division A, Title I of the CARES Act, which was enacted on March 27, 2020 (the "PPP Loan"). On October 21, 2020, Phoenix received approval from the lender for the formal forgiveness of the PPP Loan. As a result, a gain in the amount of \$551 has been recognized in the consolidated statement of operations within other income for the year ended December 31, 2020. On January 24, 2021, Phoenix was granted a second PPP loan in the amount of \$586 from the lender. On February 16, 2022, Phoenix obtained approval of forgiveness these PPP loans and recognized gains in the total amount of \$586 in the consolidated statement of operations within other income for the year ended December 31, 2022.

On April 8, 2020, SPI Solar Inc., a subsidiary of the Group, was granted a PPP loan in the amount of \$ 163. On April 12, 2020, Knight Holding Corporation, another subsidiary of the Group, was granted a PPP loan in the amount of \$42. Both of the loans were granted by East West Bank in the form of a promissory note with term of one year. The Group obtained approval of forgiveness these PPP loans and recognized gains in the total amount of \$205 in the consolidated statement of operations within other income for the year ended December 31, 2021.

On May 18, 2021, SJ US was granted a PPP loan from East West Bank in the amount of \$ 4,508, which was in the form of a promissory note, maturing on May 17, 2026. On February 16, 2022, the Group obtained approval of forgiveness these PPP loans and recognized gains in the total amount of \$4,508 in the consolidated statement of operations within other income for the year ended December 31, 2022.

There is no remaining balance of PPP loans as of December 31, 2022.

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EIDL Loan

On May 26, 2020, Phoenix was granted a loan from the U.S. Small Business Association in the aggregate amount of \$ 150, pursuant to the Economic Injury Disaster Loan under Section 7(b) of the Small Business Act, as amended (the "EIDL Loan").

The EIDL Loan, which was in the form of a promissory note (the "EIDL Note") dated May 26, 2020, matures on May 26, 2050 and bears interest at a rate of 3.75% per annum, payable monthly commencing on May 26, 2021. The EIDL Note may be prepaid at any time prior to maturity with no prepayment penalties. Funds from the EIDL Note may only be used for working capital purposes to alleviate economic injury caused by disaster occurring in the month of January 31, 2020 and continuing thereafter cause by the coronavirus pandemic. Phoenix has used the entire EIDL Note amount for what management believes to be qualifying expenses.

EWB Loan

On February 24, 2021, SJ US was granted a loan from the East West Bank in the amount of \$ 5,000 with a maturity date of February 23, 2022 (the "EWB loan"), at an interest rate of 3.25% per annum, which is secured by the deposit of \$ 5,000 from SPI Group Holding Co., Ltd. On February 7, 2022, the Group entered into a supplementary agreement with East West Bank ("the Lender"), where by the loan was extended from February 23, 2022 to February 23, 2023. Subsequently on February 27, 2023, the Group has fully repaid this loan.

Long-term bank borrowing

As of December 31, 2022, long-term bank borrowings primarily represent: 1) a 10-year long term loan borrowed from Santander Bank in the amount of \$5,068 (December 31, 2021: \$5,918) with a maturity date of February 16, 2027, of which \$3,794 is at interest rate of 3.96% per annum and \$1,274 is at interest rate of 2.84% per annum, this loan is required to be repaid in installments . 2) a loan of SJ US borrowed from East West Bank with remaining balance of \$1,750 (December 31, 2021: \$1,940) with a maturity date of May 19 2027, at an interest rate of the greater of (a) 7.5% and (b) the sum of the Prime Rate for such day minus 0.2%.

The interest expense of bank loans were \$ 1,256 and \$1,214 for the years ended December 31, 2022 and 2021. The average interest rate on short-term borrowings was 10.96% and 9.02% per annum for the years ended December 31, 2022 and 2021, respectively.

14. Convertible Bonds

	December 31, 2022	December 31, 2021
Brilliant King Group Limited (1)	\$ 12,000	\$ 12,000
Poseidon Sports Limited (1)	3,000	3,000
Vision Edge Limited (1)	20,000	20,000
Streeterville Capital, LLC (2)	7,676	13,603
Total convertible bonds, net of unamortized debt discount	<u><u>\$ 42,676</u></u>	<u><u>\$ 48,603</u></u>

(1) 2014 and 2015 Convertible Promissory Note and Amendments

In December 2014 and June 2015, the Group entered into three convertible promissory note purchase agreements with Brilliant King Group Limited ("Brilliant King"), Poseidon Sports Limited ("Poseidon") and Vision Edge Limited ("Vision Edge"), respectively, whereby the Group agreed to sell and issue to these three investors convertible promissory notes in an aggregate principal amount of \$35,000. The convertible notes bore no interest, and might be partially or wholly converted into shares of the Group's ordinary shares at any time prior to maturity at the option of the investor.

The convertible promissory notes with Brilliant King and Poseidon were due and payable on June 11, 2016; the convertible promissory note with Vision Edge was due and payable on June 29, 2016, the conversion option of these convertible bonds had expired after the due dates. The Group defaulted the payment for all above outstanding convertible bonds of \$35,000 in June 2016. The convertible notes bore no interest, and there were no default terms including default interest or penalty stated in the above convertible promissory notes. Both the Brilliant King Note and the Vision Edge Note were personally guaranteed by the Group's Chairman of Board of Directors and Chief Executive Officer, Mr. Xiaofeng Peng. While the Group has been in negotiations with these bond holders, no updated settlement arrangements have been reached.

(2) 2021 and 2022 Convertible Promissory Note with Streeterville Capital, LLC and Amendments

On February 1, 2021, June 9, 2021, September 30, 2021 and November 12, 2021, the Group entered into convertible promissory notes purchase agreement with Streeterville Capital, LLC ("Streeterville") with an aggregate principal amount of \$16,840 (the "2021 Note"). On April 8, 2022, the Group entered into a convertible promissory note purchase agreement with Streeterville with an initial principal amount of \$2,110 (the "2022 Note"). Both 2021 Note and 2022 Note had a 12-month term and carried interest at 10% per annum. The Group's obligations under the 2021 Note and 2022 Note may be prepaid at any time, provided that in such circumstance the Group would pay 115% of any amounts outstanding under the note. The note could be convertible into shares of the Group's ordinary share at a conversion price of \$20 per share at any time after the issuance date.

Streeterville could redeem any portion of the note, at any time after six months from the issue date, subject to a maximum monthly redemption amount of \$700 for 2021 Note and \$350 for 2022 Note, the Group have the option to pay such redemptions in cash or the Company's ordinary shares at the redemption conversion price, or by a combination thereof. The Group shall be required to pay the redemption amount in cash, if on the applicable redemption Date: (a) there is an Equity Conditions Failure, and such failure is not waived in writing by Lender; or (b) the closing trade price on the trading day immediately preceding the redemption date was less than \$25.00 per share. "Equity Conditions Failure" means that any of the following conditions has not been satisfied on any given Redemption Date: (a) with respect to the applicable date of determination all of the conversion shares would be freely tradable under Rule 144 or without the need for registration under any applicable federal or state securities laws (in each case, disregarding any limitation on conversion of this Note); (b) no event of default shall have occurred or be continuing hereunder; (c) the average and median daily dollar volume of the ordinary shares on its principal market for the previous twenty and two hundred trading days shall be greater than \$75; and (d) the market capitalization is greater than or equal to \$30,000.

The Group issued 3,216,846 ordinary shares of the Company to settle 2021 Note, which was considered as extinguishment of convertible bonds and the loss on extinguishment of convertible bonds of \$2,634 and nil were recorded for the year ended December 31, 2022 and 2021.

On October 28, 2022, the Group made an amendment to the 2021 Note to extend the maturity for an additional 1 year from the original maturity date for each of the remaining 2021 Note, the extension fee equal to two percent of the outstanding balances of the Note as of June 9, 2022, September 30, 2022 and November 12, 2022, which equal \$30, \$72 and \$93, respectively. Besides, the Group made an amendment to the 2021 Note for the term of redemption conversion price. The modified Redemption Conversion Price should be the 80% of the lowest closing trade price in the 10 trading days immediately preceding the applicable redemption date. The redemption conversion price for the 2022 Note should be the lesser of \$20 and 80% multiplied by the lowest closing trade price during the ten trading days immediately preceding the redemption date.

The Group deems the two amendments to the 2021 Note are substantively one amendment and evaluated the amendment in accordance with ASC 470, Debt ("ASC 470"). As the effective borrowing rate under the restructured agreement is less than the effective borrowing rate on the old agreement and as a concession is deemed to have been granted under ASC 470-60-55-10, the amendment is to be accounted for as a troubled debt restructuring under ASC 470-60. For the extension fee, as the extension fee is not incurred in granting equity interests and there is no gain recognized on restructuring because carrying amount of the payable is not larger than total undiscounted future cash flows, the extension fee was expensed for the year ended December 31, 2022.

The Group determines that the redemption feature embedded within the amended 2021 Note meets the definition of an embedded derivative and the Group estimates a fair value of the derivative liability using the Mento Carlo Simulation Model at the date of amendment. As the fair value of the derivative liability is less than the face value of the convertible debt, the fair value of the derivative liability is recorded as a liability with an offsetting amount recorded as a debt discount, which offsets the carrying amount of the debt.

The Group issued 301,724 ordinary shares of the Company to redeem the amended 2021 Note, and reclassified \$184 derivative liability into equity upon the redemption of the corresponding convertible debts.

The Group recorded a total of \$3,407 debt discount upon the amendment of 2021 Note. Amortization of the debt discount of 2021 Note was \$ 1,313 for the year ended December 31, 2022. The debt discount is amortized under effective interest rate 11.55% for 2021 Note.

The Group recorded a total of \$110 debt discount upon the issuance of 2022 Note, including \$10 of direct transaction costs incurred, and \$ 100 original debt discount at issuance. Amortization of the debt discount of 2022 Note was \$83 for the year ended December 31, 2022.

As of December 31, 2022 and 2021, the carrying amounts of the Group's convertible bonds are \$ 42,676 and \$48,603, net of unamortized debt discount of \$2,560 and \$438, respectively.

On February 16, 2023, Streeterville delivered a Redemption Notice to the Group to redeem \$350 of the 2022 Note with a deadline to pay the Redemption Amount by February 22, 2023. the Group failed to pay the Redemption Amount on time and such failure to pay is an Event of Default under the 2022 Note. Due to this Event of Default, (i) the base interest of the 2022 Note was increased to 15% per annum; (ii) the outstanding balance of the 2022 Note was increased by 15%; and (iii) the entire outstanding balance of the 2022 Note was accelerated and due on March 3, 2023 (See Note 22(b) and Note 26).

As of April 14, 2023, the Group has not made payments of the outstanding balance of the 2022 Note and the entire 2022 Note was in default.

15. Amount Due to an Affiliate

	December 31, 2022	December 31, 2021
Amount due to an affiliate, current		
Payment made by Sinsin on behalf of the Group	\$ 10,548	\$ 10,603

16. Equity

On November 12, 2020, the Group completed the acquisition of Phoenix. The consideration paid for the acquisition also included ordinary shares committed to be issued for employee incentive plan, which are non-forfeitable shares and would be issued to employees in six months after acquisition date. In July 2021, the Company issued 71,327 shares to Phoenix employees, after adjustment for the deduction of withholding tax. In March 2022, the Company issued the rest 42,442 shares to Phoenix employees, after adjustment for the deduction of withholding tax.

On February 8, 2021, the Group issued 1,365,375 ordinary shares in a registered direct offering to certain institutional investors for net proceeds of \$13,591, after deducting direct offering cost, at a price of \$ 10.79 per ordinary share.

On March 6, 2021, the Company issued 5,000 shares to Redchip Companies Inc. as payment of the service performed by Redchip Companies Inc. The market price on the issuance date was \$6.81 per share.

On December 22, 2022, the Group issued 1,150,000 ordinary shares in a private placement for net proceeds of \$1,161, after deducting offering cost, at a price of \$1.01 per ordinary share.

In 2018 when the Group disposed business in China, the Group granted Lighting Charm Limited options to purchase up to 1,000,000 of the Group's ordinary shares with par value of \$0.0001, with an exercise price of \$3.82 per share. The options vested immediately and can be exercised at any time on or prior to August 21, 2021. In 2021, Lighting Charm Limited exercised 285,500 shares options.

During the year ended December 31, 2022, \$8,659 of the 2021 Note were settled by 3,216,846 ordinary shares, and \$535 of the 2021 Note were redeemed into 301,724 ordinary shares. During the year ended December 31, 2021, \$ 1,925 of the 2020 Note were settled by 444,917 ordinary shares, and \$2,450 of the 2021 Note were redeemed into 630,252 ordinary shares (Note 14).

During the years ended December 31, 2022 and 2021, the Group issued 229,888 and 184,000 restricted ordinary shares to core management members and other management, respectively (Note 18), and issued nil and 310,500 ordinary shares due to exercise of employee share options, respectively.

17. Noncontrolling Interests

In June 2022, the Group's subsidiary, Phoenix, issued its shares of common stock in its IPO (see Note 1). The Group and the non-controlling

shareholders own 89% and 11% equity interest of Phoenix, respectively, immediately after Phoenix IPO, and the Group recognized noncontrolling interest of \$2,094 for the additional capital contribution made by the non-controlling shareholders. In September 2022, Phoenix approved the grants of unrestricted stock units to core management members and other management, pursuant to the terms of the 2021 Plan (see Note 18) and some employees of Phoenix exercised shares of vested options, the Group recognized noncontrolling interest of \$793 and \$138 for the additional capital contribution made by the non-controlling shareholders, respectively. In November 2022, Phoenix entered into a standby equity purchase agreement with an investor and issued 61,421 common shares of Phoenix as commitment fee to the investor and charged to noncontrolling interests of the Group. In December, 2022, Phoenix sold shares to the investor, the Group recognized noncontrolling interest of \$30 for the additional capital contribution made by the non-controlling shareholders. The Group and the non-controlling shareholders own 86% and 14% equity interest of Phoenix, respectively, as of December 31, 2022.

18. Share-based Compensation

During the years ended December 31, 2022 and 2021, the share-based compensation expenses were \$ 3,718 and \$5,789, respectively. The following table summarizes the consolidated share-based compensation expense, by type of awards:

	For the Years Ended	
	December 31, 2022	December 31, 2021
Employee stock options	\$ 3,095	\$ 4,593
Restricted share grants	623	1,196
Total share-based compensation expense	\$ 3,718	\$ 5,789

The following table summarizes the consolidated share-based compensation by line items:

	For the Years Ended	
	December 31, 2022	December 31, 2021
General and administrative	\$ 3,700	\$ 5,771
Sales, marketing and customer service	18	18
Total share-based compensation expense, net of nil income taxes	\$ 3,718	\$ 5,789

As share-based compensation expense recognized in the consolidated statements of operations is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Determining Fair Value

Valuation and Amortization Method —The Group estimates the fair value of service-based options granted using the Black-Scholes option-pricing formula. The fair value is then amortized on a straight-line basis over the requisite service periods of the awards, which is generally the vesting period.

Expected Term —The Group's expected term represents the period that the Group's share-based awards are expected to be outstanding. For awards granted subject only to service vesting requirements, the Group utilizes the simplified method for estimating the expected term of the share-based award, instead of historical exercise data.

Expected Volatility —The Group uses historical volatility of the price of its ordinary shares to calculate the volatility for its granted options.

Expected Dividend —The Group has never paid dividends on its ordinary shares and currently does not intend to do so, and accordingly, the dividend yield percentage is zero for all periods.

Risk-Free Interest Rate — The Group bases the risk-free interest rate used in the Black-Scholes valuation model upon the implied yield curve currently available on U.S. Treasury zero-coupon issued with a remaining term equal to the expected term used as the assumption in the model.

Assumptions used in the determination of the fair value of share-based payment awards using the Black-Scholes model for stock option grants were as follows:

(a) 2015 Equity Incentive Plan

	For the Years Ended	
	December 31, 2022	December 31, 2021
Expected term	—	6.25 years
Risk-free interest rate	—	0.11%-0.16%
Expected volatility	—	713%-719%
Expected dividend yield	—	0%

(b) 2021 Equity Incentive Plan of Phoenix

	For the Years Ended	
	December 31, 2022	December 31, 2021
Expected term	6.25 years	1-3 years
Risk-free interest rate	3.04%-3.97%	1.52%
Expected volatility	137.7% - 169.3%	64.4% - 69.0%
Expected dividend yield	0%	0%

(c) 2021 SolarJuice Equity Incentive Plan

	For the Years Ended	
	December 31, 2022	December 31, 2021
Expected term	6.25 years	3 years
Risk-free interest rate	2.94% - 3.93%	1.52%
Expected volatility	73.54% - 74.17%	45.3%
Expected dividend yield	0%	0%

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Equity Incentive Plan

(a) 2015 Equity Incentive Plan

On May 8, 2015, the Group adopted the 2015 Equity Incentive Plan (the "2015 Plan") which permits the Group to grant stock options to directors, officers or employees of the Group or others to purchase ordinary shares of the Company through awards of incentive and nonqualified stock options ("Option"), Restricted Stock or Unrestricted Stock and stock appreciation rights ("SARs") which was approved by the shareholders. The total number of shares which may be issued under the 2015 Plan is 9% of the number of outstanding and issued ordinary shares of the Group. The option price per share shall be determined by the compensation committee of the Board ("Compensation Committee"), unless expressly approved by the Compensation Committee, the option price shall not be less than 100% of the fair market value of the shares on the date an option is granted. No option was granted in the year ended December 31, 2022 under the 2015 Plan.

During the years ended December 31, 2022 and 2021, the Board of Directors approved the grants of Restricted Stock Units ("RSUs") to core management members and other management, pursuant to the terms of the 2015 Plan. The total number of RSUs granted were 229,888 and 184,000 shares, respectively. The RSUs are 100% vested at the grant date for all the grants. The Group used the market price of its shares at grant date as the fair value of the RSUs in calculating the share-based compensation expense.

The following table summarizes the Group's stock option activities:

	Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (\$'000)
Outstanding as of December 31, 2020	388,900	10	7.52	\$ 486
Granted	969,000	7		
Exercised	(25,000)	4		
Forfeited/expired	(117,000)	11		
Outstanding as of December 31, 2021	1,215,900	8	9.04	\$ 82
Granted	—	—		
Exercised	—	—		
Forfeited/expired	—	—		
Outstanding as of December 31, 2022	1,215,900	7	7.87	1
Exercisable as of December 31, 2022	440,150	6	7.35	\$ 1
Non-vested as of December 31, 2022	775,750	7		

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The following table presents the exercise price and remaining life information for options exercisable at December 31, 2022:

Range of exercise price	Shares Exercisable	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Aggregate Intrinsic (\$'000)
\$118 - \$172	1,000	2.08	\$ 172.00	—
\$40 - \$117	14,600	3.33	\$ 62.03	—
\$3 - \$39	412,050	7.52	\$ 7.54	—
\$1-\$2	12,500	6.80	\$ 1.61	1
	440,150	7.35	6.36	1

The following table presents a summary of the restricted stock awards:

	Number of Shares	Weighted Average Grant-Date Fair Value	
Restricted stock units at December 31, 2020	–	–	–
Granted	184,000	\$ 6.34	6.34
Vested	(184,000)	\$ 6.34	6.34
Restricted stock units at December 31, 2021	–	–	–
Granted	229,888	\$ 2.71	2.71
Vested	(229,888)	\$ 2.71	2.71
Restricted stock units at December 31, 2022	–	–	–

(b) 2021 Equity Incentive Plan of Phoenix

On January 24, 2021, Phoenix has adopted the 2021 Equity Incentive Plan (the "2021 Plan") which permits Phoenix to grant stock options to directors, officers or employees of Phoenix or others to purchase shares of common stock of Phoenix through awards of incentive and nonqualified stock options ("Option"). The total number of shares may be issued under the 2021 Plan is 9% of the number of issued and outstanding common stocks of Phoenix. The options are subject to a vesting schedule that vests 25% of granted options per year over the next four years.

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The following table summarizes the Phoenix's stock option activities:

	Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (\$000)
Outstanding as of December 31, 2020	–	–	–	\$ –
Granted	2,040,500	\$ 1.72	–	\$ –
Exercised	–	–	–	–
Forfeited/expired	(354,000)	\$ 1.72	–	–
Outstanding as of December 31, 2021	1,686,500	\$ 1.72	9.45	\$ 2,091
Granted	888,000	1.70	–	–
Exercised	(80,625)	–	–	–
Forfeited/expired	(731,375)	1.72	–	–
Outstanding as of December 31, 2022	1,762,500	1.71	8.93	16
Exercisable as of December 31, 2022	212,063	1.63	8.25	12
Expected to vest as of December 31, 2022	1,550,437	\$ 1.72	–	–

Unrestricted stock units granted by Phoenix

During the year ended December 31, 2022, the Board of Directors of Phoenix approved the grants of unrestricted stock units to core management members and other management, pursuant to the terms of the 2021 Plan. The total number of unrestricted stock units granted was 505,000 of Phoenix's ordinary shares. The vesting schedules are 100% vested at the grant date for all the grants. The Group used the market price of Phoenix's shares at grant date as the fair value of the unrestricted stock units in calculating the share-based compensation expense. During the year ended December 31, 2022, the stock-based compensation expense for grants of unrestricted stock units was \$793.

(c) 2021 SolarJuice Equity Incentive Plan

On May 17, 2021, options to purchase 1,529,290 ordinary shares of SolarJuice at an exercise price of \$ 1.92 per share were granted to employees of SolarJuice, which has been retrospectively adjusted to reflect a one for four reverse stock split of SolarJuice. The options are subject to a vesting schedule that vests 25% of granted options per year over the next four years. The fair value of the options as of the grant day is \$1.72 per share and the purpose for the grant is for compensation and incentive to these employees for their service to SolarJuice.

On July 6, 2022 and October 1, 2022, options to purchase 272,502 and 106,250 ordinary shares of SolarJuice at an exercise price of \$ 2.11 and \$7.26 per share were granted to employees of SolarJuice, respectively. The options are subject to a vesting schedule that vests 25% of granted options per year over the next four years. The fair value of the options as of the grant day of July 6, 2022 and October 1, 2022 is \$4.36 and \$4.19 per share, respectively and the purpose for the grant is for compensation and incentive to these employees for their service to SolarJuice.

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The following table summarizes the SolarJuice's stock option activities:

	Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (\$000)
Outstanding as of December 31, 2020	–	–	–	\$ –
Granted	1,529,290	\$ 1.92	–	\$ –

Exercised	—				
Forfeited/expired	(413,215)	\$ 1.92			
Outstanding as of December 31, 2021	<u>1,116,075</u>	\$ 1.92	9.44	\$	1,607
Granted	378,752	3.56			
Exercised	—				
Forfeited/expired	(450,179)	1.92			
Outstanding as of December 31, 2022	<u>1,044,648</u>	2.51	8.80		3,861
Vested and exercisable as of December 31, 2022	166,474	1.92	8.36		694
Non-vested as of December 31, 2022	878,174	\$ 2.63			

Other Stock-based Compensation

On January 24, 2021, an option to purchase 1,050,000 fully vested common stocks of Phoenix at an exercise price of \$ 1.29 per share was granted to Mr. Xiaofeng Denton Peng, the chairman of the Board of Directors of the Group. The grant of options is a special one-time award in recognition of his work done related to the acquisition of Phoenix. The options are valued at \$0.04 per share using the weighted average of the values under guideline public company method and transaction method, and applied a discount for marketability to come up with the fair value.

On February 28, 2021, options to purchase 1,500,000 fully vested ordinary shares of SolarJuice at an exercise price of \$ 1.92 per share were granted to Mr. Xiaofeng Denton Peng, the chairman of the Board of Directors of the Group. The option fair value as of the grant day is \$ 1.72 per share and the purpose for the grant is in recognition of his past service for SolarJuice and its subsidiaries.

There were no changes to the contractual life of any fully vested options during the years ended December 31, 2022 and 2021. As of December 31, 2022, there were \$9,663 of unrecognized share-based compensation expenses related to the share options granted. The expenses are expected to be recognized over a weighted-average period of 2.5 years.

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19. Income Taxes

Income / (loss) before provision for income taxes is attributable to the following geographic locations for the years ended December 31:

	For the years ended December 31,	
	2022	2021
United States	\$ (35,293)	\$ (45,860)
Foreign Countries	3,562	2,480
Total loss before income taxes	\$ (31,731)	\$ (43,380)

The provision for income taxes consists of the following for the years ended December 31:

	For the years ended December 31,	
	2022	2021
Current tax:		
Federal tax	\$ —	\$ —
State tax	21	4
Foreign countries	2,439	1,672
Total current tax	2,460	1,676
Deferred tax:		
Federal tax	\$ —	\$ —
State tax	—	—
Foreign countries	(468)	(222)
Total deferred tax	(468)	(222)
	\$ 1,992	\$ 1,454

The reconciliation between the actual income tax expense and income tax computed by applying the statutory U.S. Federal income tax rate for the years ended December 31 is as follows:

	For the years ended December 31,	
	2022	2021
Provision for income taxes at U.S. Federal statutory rate	\$ (6,664)	\$ (9,110)
State taxes, net of federal benefit	(3,958)	(10)
Foreign taxes at different rate	730	869
Non-deductible expenses	47	12
	16,382	9,645
Valuation allowance		
Other	(475)	(82)
Share Based Compensation	145	130
Deferred True-up	(3,473)	—
Credits	(742)	—
	\$ 1,992	\$ 1,454

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Deferred income taxes reflect the net tax effects of loss carry forwards and temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Presented below are the significant components of the Group's deferred tax assets and liabilities for federal, state and foreign income taxes at December 31:

	As of December 31,	
	2022	2021
Deferred tax assets:		
Net operating loss carry forwards	\$ 97,622	\$ 86,624
Impairment of property and equipment, and project assets	86	541
Temporary differences due to accrued warranty costs	83	103
Investment in subsidiaries	3,777	4,459
Credits	1,246	16
Allowance for bad debts	2,021	2,076
Fair value adjustment arising from subsidiaries acquisition	26	30
Stock compensation	2,790	1,861
Unrealized loss on derivatives	5,918	5,095
Unrealized investment loss	3,963	3,407
Other temporary differences	11,101	7,726
Valuation allowance	<u>(128,152)</u>	<u>(111,770)</u>
Total deferred tax assets	<u>479</u>	<u>168</u>
Deferred tax liabilities:		
Fair value adjustment arising from subsidiaries acquisition	(2,673)	(2,970)
Total deferred tax liabilities	<u>(2,673)</u>	<u>(2,970)</u>
Net deferred tax liabilities	<u><u>\$ (2,194)</u></u>	<u><u>\$ (2,802)</u></u>

As of December 31, 2022, the Group had a net operating loss carry forward for federal income tax purposes of approximately \$ 396,601. Of the federal net operating loss carryforwards, \$86,156 begin to expire from the year 2027 to 2037. The remaining \$ 310,445 of federal net operating loss carryforwards, which are limited to 80% of taxable income rather than the historical 100%, do not expire. The Group had total state net operating loss carryforwards of approximately \$181,865, which will begin to expire in the year 2026 to 2042. The Group has foreign net operating loss carryforwards of \$17,743. The Group has a federal R&D credit of \$ 758, which will begin to expire from the year 2041 to 2042. The Group has a California R&D credit of \$488, which will never expire.

Utilization of the federal and state net operating losses may be subject to certain annual limitations under IRC Section 382 due to the "change in ownership" provisions. The annual limitation may result in the expiration of net operating losses and credits before utilization. The Group has a full valuation allowance against US federal and state net operating losses.

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The Group recognizes deferred tax assets if it is more likely than not that those deferred tax assets will be realized. Management reviews deferred tax assets periodically for recoverability and makes estimates and judgments regarding the expected geographic sources of taxable income in assessing the need for a valuation allowance to reduce deferred tax assets to their estimated realizable value. Realization of the Group's deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Because of the Group's lack of earnings history, the net deferred tax assets have been fully offset by a valuation allowance in the U.S. The valuation allowance increased by \$13,915 and \$9,645 during the years ended December 31, 2022 and 2021, respectively.

The Group had no unrecognized tax benefits as of December 31, 2022 and 2021, respectively. The Group currently files income tax returns in the U.S., as well as California, Hawaii, New Jersey, and certain other foreign jurisdictions. The Group is currently not the subject of any income tax examinations. The Group's tax returns generally remain open for tax years after 2012.

The Coronavirus Aid, Relief and Economy Security (CARES) Act ("the CARES Act, H.R. 748") was signed into law on 27 March 2020. The CARES Act temporarily eliminates the 80% taxable income limitation (as enacted under the Tax Cuts and Jobs Act of 2017) for NOL deductions for 2018-2020 tax years and reinstated NOL carrybacks for the 2018-2020 tax years. Moreover, the CARES Act also temporarily increases the business interest deduction limitations from 30% to 50% of adjusted taxable income for the 2019 and 2020 taxable year. Lastly, the Tax Act technical correction classifies qualified improvement property as 15-year recovery period, allowing the bonus depreciation deduction to be claimed for such property retroactively as if it was included in the Tax Act at the time of enactment.

The Tax Cuts and Jobs Act included a sunset provision such that Research and Experimental Expenses incurred after December 31, 2021 are capitalized and amortized. US R&E expenses are amortized over five years and non-US R&E expenses are amortized over fifteen years. As part of the December 31, 2022 tax provision calculation, the Group added back to taxable income, research expenditures of \$1,472. These expenses were incurred in the U.S. and amortized over 5 years for U.S. tax purposes.

20. Net Loss Per Share

As a result of the net loss for the years ended December 31, 2022 and 2021, there is no dilutive impact to the net loss per share calculation for the period.

The following table presents the calculation of basic and diluted net loss per share:

	December 31,	
	2022	2021
Numerator:		
Net loss attributable to shareholders of SPI Energy Co., Ltd.	\$ (33,421)	\$ (45,491)
Denominator:		
Weighted-average number of ordinary shares-basic and diluted	26,513,193	24,192,815
Basic and diluted net loss per share	<u><u>\$ (1.3)</u></u>	<u><u>\$ (1.9)</u></u>

For the years ended December 31, 2022 and 2021, the following securities were excluded from the computation of diluted net loss per share as inclusion would have been anti-dilutive.

	For years ended December 31,	
	2022	2021
In-the-money share options and non-vested restricted stock	5,000	53,300
Convertible bonds (Note 14)	511,778	702,000
Total	516,778	755,300

21. Leases

The Group has operating leases for its PV stations office facilities, and certain warehouses. The Group's leases have remaining terms of less than one year to approximately twenty years. Leases with an initial term of 12 months or less are not recorded on the balance sheet; the Group recognizes lease expense for these leases on a straight-line basis over the lease term. The operating lease expenses were \$2,395 and \$1,772 for the years ended December 31, 2022 and 2021, respectively.

In July 2022, the Group made a decision that SJ US would pause its roofing and solar energy system installation business in the states of Florida, Texas, Nevada and Colorado, due to insufficient business volume and profitability in those four states. In August 2022, the Group provided its notice to terminate the leases for its offices in Colorado, Florida, Nevada and Texas to the respective landlords. The total lease termination costs for these four locations were about \$150, which is included in general and administrative expense on the consolidated statement of operations for the year ended December 31, 2022. The Company derecognized \$151 of right of use assets and \$ 151 of lease liabilities as of the date of early termination. In accordance with the termination, the Company was released from all future rights and obligations under the lease.

Right-of-use assets, along with other long-lived assets, are evaluated for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. In 2022, the Group identified indicators of impairment for long-lived assets held by SJ US due to gross loss generated from roofing and solar energy systems installation business. For right-of-use assets held by SJ US, the Group performed a recoverability test, comparing estimated undiscounted cash flows to the carrying value of the related long-lived assets within the asset group and considered that the carrying amount is not recoverable. The Group recorded an impairment charge of \$1,585, for impairment of its right-of-use assets in its renewable energy solutions segment for the year ended December 31, 2022. These charges were recorded in impairment charges on long-lived assets in the Group's consolidated statements of operations. For the year ended December 31, 2021, there were no impairment charges recorded related to long-lived assets.

Maturities of operating lease liabilities as of December 31, 2022 were as follow:

Maturity of Lease Liabilities	Operating Leases
2023	\$ 2,571
2024	2,200
2025	2,558
2026	2,689
2027	1,869
Thereafter	<u>11,825</u>
 Total lease payments	 23,712
Less: interest	(7,849)
Present value of lease payments	\$ 15,863
Operating lease liabilities, current	\$ 1,607
Operating lease liabilities, noncurrent	\$ 14,256

Supplemental information related to operating leases was as follows:

	For the years ended December 31,	
	2022	2021
Cash paid for amounts included in the measurement of lease liabilities	\$ 2,395	\$ 1,772
New operating lease assets obtained in exchange for operating lease liabilities	\$ 3,450	\$ 8,502

As of December 31, 2022 and 2021, the operating leases had a weighted average remaining lease term of 12.7 years and 12.3 years, respectively, and a weighted average discount rate of 6.16% and 6.16%, respectively.

22. Commitments and Contingencies

(a) Capital and Other Commitments

As of December 31, 2022, the Group had other commitments of approximately \$ 1,112. These commitments were solely related to contracts signed with vendors for research and development by the Group and are expected to be paid in one year.

(b) Contingencies

On January 26, 2018, Sinsin Group filed a complaint against the Group requesting the payment of outstanding purchase price and related interest of \$43,595 (EUR 38,054). On June 25, 2018, an interim measures judgment was made which appointed an interim management of Sinsin, consisting of two members elected by Sinsin Group and one member elected by the Group. The interim management would manage the bank accounts of Sinsin and collect the proceeds of electric energy revenue. On October 29, 2020, an arbitration decision was made that the Group will need to pay the outstanding purchase price of \$43,595 (EUR 38,054), together with interest at 6% accruing from November 20, 2015 on half of

the outstanding purchase and from June 30, 2016 on the remaining half of the outstanding purchase price to the date of eventual payment. The Group filed an application for appeals in the court of Malta but was turned down by the court of Malta in November 2021. The Group furtherly filed an application of retrial and suspension of the enforcement of the awards. The application of retrial was rejected by the court of Malta on March 30, 2022. On November 2, 2022, Sinsin filed an action to confirm these arbitral awards pursuant to the Convention on the Recognition and Enforcement of Foreign Arbitral Awards of June 10, 1958 ("New York Convention") as implemented by the Federal Arbitration Act ("FAA") before U.S. District Court Eastern District of California, and the management is in progress of negotiation with Sinsin to achieve a settlement to suspend the enforcement of the arbitration decision. On April 11, 2023, Sinsin filed a motion seeking leave to amend its petition to add a request for an award of attorneys' fees incurred in connection with the petition, add detail on the allegedly owed costs and liabilities, and request that the court issue an injunction against asset dissipation pending satisfaction of the requested judgment. The Group will be opposing the motion for leave to amend, and the hearing is set for May 18, 2023.

On February 16, 2023, Streeterville delivered a Redemption Notice to the Group to redeem \$350 of the 2022 Note with a deadline to pay the Redemption Amount by February 22, 2023 (See Note 14 and Note 26). The Group failed to pay the Redemption Amount on time and such failure to pay is an Event of Default under the 2022 Note. Due to this Event of Default, (i) the base interest of the 2022 Note was increased to 15% per annum; (ii) the outstanding balance of the 2022 Note was increased by 15%; and (iii) the entire outstanding balance of the 2022 Note was accelerated and due on March 3, 2023. The Group failed to pay the outstanding balance of the 2022 Note by March 3, 2023 and as a result, Streeterville filed a complaint in the third judicial district court of Salt Lake County, requesting for actual damages in an amount not less than \$2,676, plus applicable interest, damages, charges, fees, attorney fees, and collection costs. On March 31, 2023, a hearing was held and the temporary restraining order requiring the Group to pay the 2022 Note in full from the proceeds of the IPO of its subsidiary, SolarJuice Co., Ltd.

From time to time, the Group is involved in various other legal and regulatory proceedings arising in the normal course of business. While the Group cannot predict the occurrence or outcome of these proceedings with certainty, it does not believe that an adverse result in any pending legal or regulatory proceeding, individually or in the aggregate, would be material to the Group's consolidated financial condition or cash flows; however, an unfavorable outcome could have a material adverse effect on the Group's results of operations.

23. Concentration Risk

A substantial percentage of the Group's net revenue comes from sales made to a small number of customers to whom sales are typically made on an open account basis.

There was no customer of which the revenue accounted for 10% or more of total net revenue for the years ended December 31, 2022 and 2021.

As of December 31, 2022, there was one customer of which the accounts receivable accounted for 18% of total accounts receivable.
As of December 31, 2021, there was one customer of which the accounts receivable accounted for 21% of total accounts receivable.

As of December 31, 2022, there were two suppliers of which the accounts payable accounted for 14% and 11% of total accounts payable, respectively. As of December 31, 2021, there was no supplier of which the accounts payable accounted for 10% or more of total accounts payable.

24. Related Party Transactions

The amount due from related parties were \$332 and \$230 as of December 31, 2022 and 2021, respectively, represented expense paid by the Company on behalf of a related entity for business operations.

25. Segment information

For the year ended December 31, 2022, there are three operating segments: (1) renewable energy solutions business, (2) solar projects development business and (3) EV business. The Group's CODM assess the performance of each segment based on revenue, cost of revenues and gross profit (loss). Other than the information provided below, the CODM does not use any other measures by segments.

Summarized information by segments for the years ended December 31, 2022 and 2021 is as follows:

	For the year ended December 31, 2022				
	Renewable energy solutions	Solar projects development	Electric vehicles	Others	Total
	USD	USD	USD	USD	USD
Revenues from external customers	166,582	5,725	4,181	1,030	177,518
Cost of revenues	157,039	2,056	3,417	521	163,033
Gross profit	9,543	3,669	764	509	14,485

	For the year ended December 31, 2021				
	Renewable energy solutions	Solar projects development	Electric vehicles	Others	Total
	USD	USD	USD	USD	USD
Revenues from external customers	152,166	5,481	2,977	1,369	161,993
Cost of revenues	142,441	2,133	3,540	3,259	151,373
Gross profit (loss)	9,725	3,348	(563)	(1,890)	10,620

	As of December 31,	
	2022 USD	2021 USD
Segment assets		
Renewable energy solutions	71,260	52,946
Solar projects development	133,663	144,852
Electric vehicles	20,275	17,738
Others	5,897	12,544
Total segment assets	231,095	228,080

Total long-lived assets excluding financial instruments, intangible assets, long-term investment and goodwill by country were as follows:

	As of December 31,	
	2022 USD	2021 USD
Australia	398	577
United States	46,307	37,021
Japan	586	1,414
Italy	1,508	1,749
United Kingdom	7,945	9,477
Greece	13,882	15,404
Total long-lived assets	70,626	65,642

26. Subsequent Events

Complaint upon the default of Streeterville 2022 Note

On February 16, 2023, Streeterville delivered a Redemption Notice to the Group to redeem \$350 of the 2022 Note with a deadline to pay the Redemption Amount by February 22, 2023 (Note 14 and Note 22(b)). the Group failed to pay the Redemption Amount on time and such failure to pay is an Event of Default under the 2022 Note. Due to this Event of Default, (i) the base interest of the 2022 Note was increased to 15% per annum; (ii) the outstanding balance of the 2022 Note was increased by 15%; and (iii) the entire outstanding balance of the 2022 Note was accelerated and due on March 3, 2023. The Group failed to pay the outstanding balance of the 2022 Note by March 3, 2023 and as a result, Streeterville filed a complaint in the third judicial district court of Salt Lake County, requesting for actual damages in an amount not less than \$2,676, plus applicable interest, damages, charges, fees, attorney fees, and collection costs. On March 31, 2023, a hearing was held and the temporary restraining order requiring the Group to pay the 2022 Note in full from the proceeds of the IPO of its subsidiary, SolarJuice Co., Ltd.

Repayment of EWB loan

On February 7, 2022, the Group entered into a supplementary agreement with East West Bank ("the Lender"), where by the loan of \$5,000 borrowed on February 23, 2021 (Note 13) was extended from February 23, 2022 to February 23, 2023. Subsequently on February 27, 2023, the Group has fully repaid this loan.

Additional financing through the existing standby equity purchase agreement of Phoenix

From January 1, 2023 through April 14, 2023, the Group obtained additional financing through the existing standby equity purchase agreement of Phoenix in a total amount of \$1,155 with 904,878 common shares sold to the Investor.

The Group has evaluated subsequent events through the date of issuance of the consolidated financial statements, there were no other subsequent events occurred that would require recognition or disclosure in the consolidated financial statements

DESCRIPTION OF SECURITIES OF SPI ENERGY

The following description of the material terms of SPI Energy's ordinary shares. This description is qualified by reference to the amended and restated form of memorandum of association and articles of association of SPI Energy, which are attached as an exhibit to SPI's annual report. You are encouraged to read the relevant provisions of the Companies Law and SPI Energy's amended and restated memorandum and articles of association as they relate to the following summary.

Authorized Share Capital

SPI Energy is authorized to issue 5,000,000,000 shares of a par value of US\$0.00001 each. The board of directors of SPI Energy is authorized to issue these shares in different classes and series and, with respect to each class or series, to determine the designations, powers, preferences, privileges and other rights, including dividend rights, conversion rights, terms of redemption and liquidation preferences, any or all of which may be greater than the powers and rights associated with the ordinary shares, at such times and on such other terms as they think proper.

As of the date hereof, SPI Energy had 30,292,960 ordinary share issued and outstanding and no preference shares issued and outstanding.

Ordinary Shares

General

All of SPI Energy's outstanding ordinary shares will be issued credited as fully paid and non-assessable. SPI Energy's ordinary shares are issued in registered form, and are issued when registered in SPI Energy's register of members. SPI Energy's shareholders who are non-residents of the Cayman Islands may freely hold and transfer their ordinary shares.

Dividends

The holders of SPI Energy's ordinary shares are entitled to such dividends as may be declared by SPI Energy's board of directors, subject to the Companies Law and the memorandum and articles of association of SPI Energy, as amended and restated from time to time. Under Cayman Islands law, dividends may be declared and paid only out of funds legally available therefor, namely out of either profit or share premium account, provided that a dividend may not be paid if this would result in SPI Energy being unable to pay its debts as they fall due in the ordinary course of business.

Register of Members

Under Cayman Islands law, SPI Energy must keep a register of members and there shall be entered therein:

- (a) the names and addresses of the members, a statement of the shares held by each member, and of the amount paid or agreed to be considered as paid, on the shares of each member;
- (b) the date on which the name of any person was entered on the register as a member; and
- (c) the date on which any person ceased to be a member.

Under Cayman Islands law, the register of members of SPI Energy is *prima facie* evidence of the matters set out therein (i.e., the register of members will raise a presumption of fact on the matters referred to above unless rebutted) and a member registered in the register of members shall be deemed as a matter of Cayman Islands law to have legal title to the shares as set against its name in the register of members. Upon the closing of this Redomicile Merger, the register of members shall be immediately updated to reflect the issue of shares by SPI Energy that will underlie the ADSs. Once SPI Energy's register of members has been updated, the shareholders recorded in the register of members will be deemed to have legal title to the shares set against their name in the register of members.

Voting Rights

Each holder of ordinary shares is entitled to one vote on all matters upon which the ordinary shares are entitled to vote on a show of hands or, on a poll, each holder is entitled to have one vote for each share registered in his name on the register of members. Voting at any meeting of shareholders is by show of hands unless a poll is demanded. A poll may be demanded by the chairman of SPI Energy's board of directors or by any one or more shareholders holding at least one-tenth of the paid-up shares given a right to vote at the meeting or one-tenth of the votes attaching to the issued and outstanding ordinary shares in SPI Energy entitled to vote at general meetings, present in person or by proxy.

A quorum required for a general meeting of shareholders consists of one or more shareholders who hold in aggregate at least one-third of the votes attaching to the issued and outstanding ordinary shares in SPI Energy entitled to vote at general meetings, present in person or by proxy or, if a corporation or other non-natural person, by its duly authorized representative. Although not required by the Companies Laws or SPI Energy's amended and restated memorandum and articles of association, SPI Energy expects to hold shareholders' meetings annually and such meetings may be convened by SPI Energy's board of directors on its own initiative or upon a request to the directors by shareholders holding in aggregate at least one-third of SPI Energy's shares that carry the right to vote at general meetings. Advance notice of at least 14 days is required for the convening of SPI Energy's annual general meeting and other shareholders meetings.

An ordinary resolution to be passed by the shareholders requires the affirmative vote of a simple majority of the votes attaching to the ordinary shares cast by those shareholders entitled to vote who are present in person or by proxy in a general meeting, while a special resolution requires the affirmative vote of no less than two-thirds of the votes attaching to the ordinary shares cast by those shareholders entitled to vote who are present in person or by proxy in a general meeting.

Transfer of Ordinary Shares

Subject to the restrictions of SPI Energy's articles of association, as applicable, any of SPI Energy's shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in the usual or common form or any other form approved by SPI Energy's board.

SPI Energy's board of directors may, in its absolute discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which SPI Energy have a lien. SPI Energy's directors may also decline to register any transfer of any ordinary share unless:

- the instrument of transfer is lodged with SPI Energy, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as SPI Energy's board of directors may reasonably require to show the right of the transferor to make the transfer;
- the instrument of transfer is in respect of only one class of ordinary shares;
- the instrument of transfer is properly stamped, if required;
- in the case of a transfer to joint holders, the number of joint holders to whom the ordinary share is to be transferred does not exceed four; or
- the ordinary shares transferred are free of any lien in favor of SPI Energy.

If SPI Energy's directors refuse to register a transfer they shall, within two months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal. The registration of transfers may, on 14 days' notice being given by advertisement in such one or more newspapers or by electronic means, be suspended and the register closed at such times and for such periods as SPI Energy's board of directors may from time to time determine; provided, however, that the registration of transfers shall not be suspended and the register shall not be closed for more than 30 days in any year.

Liquidation

On a winding up of SPI Energy, if the assets available for distribution among its shareholders shall be more than sufficient to repay the whole of the share capital at the commencement of the winding up, the surplus will be distributed among its shareholders in proportion to the par value of the shares held by them at the commencement of the winding up, subject to a deduction from those shares in respect of which there are monies due, of all monies payable to SPI Energy for unpaid calls or otherwise. If SPI Energy's assets available for distribution are insufficient to repay all of the paid-up capital, the assets will be distributed so that the losses are borne by its shareholders in proportion to the par value of the shares held by them.

Calls on Ordinary Shares and Forfeiture of Ordinary Shares

SPI Energy's board of directors may from time to time make calls upon shareholders for any amounts unpaid on their ordinary shares in a notice served to such shareholders at least 14 days prior to the specified time of payment. The ordinary shares that have been called upon and remain unpaid are subject to forfeiture.

Redemption, Repurchase and Surrender of Ordinary Shares

SPI Energy may issue shares on terms that are subject to redemption, at SPI Energy's option or at the option of the holders, on such terms and in such manner as may be determined before the issue of such shares, by SPI Energy's board of directors or by a special resolution of SPI Energy's shareholders. SPI Energy may also repurchase any of its shares provided that the manner and terms of such purchase have been approved by its board of directors or are otherwise authorized by its memorandum and articles of association. Under the Companies Law, the redemption or repurchase of any share may be paid out of SPI Energy's profits or out of the proceeds of a fresh issue of shares made for the purpose of such redemption or repurchase, or out of capital (including share premium account and capital redemption reserve) if SPI Energy can, immediately following such payment, pay its debts as they fall due in the ordinary course of business. In addition, under the Companies Law no such share may be redeemed or repurchased (a) unless it is fully paid up, (b) if such redemption or repurchase would result in there being no shares outstanding, or (c) if the company has commenced liquidation. In addition, SPI Energy may accept the surrender of any fully paid share for no consideration.

Variations of Rights of Shares

All or any of the special rights attached to any class of shares may, subject to the provisions of the Companies Law, be varied either with the written consent of the holders of a majority of the issued shares of that class or with the sanction of an ordinary resolution passed at a general meeting of the holders of the shares of that class.

Inspection of Books and Records

Holders of SPI Energy's ordinary shares have no general right under Cayman Islands law to inspect or obtain copies of SPI Energy's list of shareholders or its corporate records. However, SPI Energy will provide its shareholders with annual audited financial statements. See "Where You Can Find Additional Information."

Changes in Capital

SPI Energy may from time to time by ordinary resolution:

- increase its share capital by such sum, to be divided into shares of such classes and amount, as the resolution shall prescribe;
- consolidate and divide all or any of its share capital into shares of a larger amount than its existing shares;
- convert all or any of its paid up shares into stock and reconvert that stock into paid up shares of any denomination;
- sub-divide its existing shares, or any of them into shares of a smaller amount that is fixed by the amended and restated memorandum and articles of association; and
- cancel any shares which, at the date of the passing of the resolution, have not been taken or agreed to be taken by any person and diminish the amount of its share capital by the amount of the shares so cancelled.

Subject to Companies Law and confirmation by the Grand Court of the Cayman Islands on an application by SPI Energy for an order confirming such reduction, SPI Energy may by special resolution reduce its share capital and any capital redemption reserve in any manner authorized by law.

Issuance of Additional Preferred Shares

SPI Energy's amended and restated memorandum and articles of association authorizes SPI Energy's board of directors to issue additional ordinary shares from time to time as its board of directors shall determine, to the extent of available authorized but unissued shares.

SPI Energy's amended and restated memorandum and articles of association authorizes SPI Energy's board of directors to establish from time to time one or more series of preferred shares and to determine, with respect to any series of preferred shares, the terms and rights of that series, including:

- the designation of the series;
- the number of shares of the series;
- the dividend rights, dividend rates, conversion rights, voting rights; and
- the rights and terms of redemption and liquidation preferences.

SPI Energy's board of directors may issue preferred shares without action by its shareholders to the extent authorized but unissued. In addition, the issuance of preferred shares may be used as an anti-takeover device without further action on the part of the shareholders. Issuance of these shares may dilute the voting power of holders of ordinary shares.

Exempted Company

SPI Energy is an exempted company duly incorporated with limited liability under the Companies Law. The Companies Law distinguishes between ordinary resident companies and exempted companies. Any company, the objects of which are to conduct business mainly outside of the Cayman Islands, may apply to be registered as an exempted company. The requirements for an exempted company are essentially the same as for an ordinary company except for certain exemptions and privileges, including (a) an exempted company does not have to file an annual return of its shareholders with the Registrar of Companies, (b) an exempted company is not required to open its register of members for inspection, (c) an exempted company does not have to hold an annual general meeting, (d) an exempted company may issue no par value, negotiable or bearer shares, and (e) an exempted company may register by way of continuation in another jurisdiction and be deregistered in the Cayman Islands.

Transfer Agent

The transfer agent and registrar for SPI Energy's ordinary shares is Vstock Transfer LLC.

List of Subsidiaries

All of the direct and indirect subsidiaries of the Company are set forth as below:

Subsidiaries	Place of Incorporation	Percentage of ownership
SPI Energy Co.,Ltd.	Cayman	100%
SPI Solar,Inc.	US	100%
JP Energy Partners, LP	US	100%
South Point Fit LLC	US	100%
Solar Hub Utilities, LLC	US	100%
Calwaii Power Holding, LLC	US	100%
Oahu SPE 101-1 LLC	US	100%
Maui 17-1 LLC	US	100%
Hawaii FIT Twelve LLC,	US	100%
Kona 50-18 LLC	US	100%
Kona 50-19 LLC	US	100%
Kona 50-20 LLC	US	100%
Kona 50-21 LLC	US	100%
Kona 50-22 LLC	US	100%
Kona 50-23 LLC	US	100%
Kona 50-24 LLC	US	100%
Kona 50-25 LLC	US	100%
Kona 50-26 LLC	US	100%
Kona 50-27 LLC	US	100%
Kona 50-28 LLC	US	100%
Kona 50-29 LLC	US	100%
Kona 50-30 LLC	US	100%
Kona 50-31 LLC	US	100%
Kona 50-33 LLC	US	100%
Kona 50-34 LLC	US	100%
Kona 50-35 LLC	US	100%
SOLAR POWER INC UK SERVICES LIMITED	UK	100%
CAIRNHILL SOLARFIELD LIMITED	UK	100%
EMOTION ENERGY SOLAR ONE LIMITED	UK	100%
Eifuku Nogen Co., Ltd.	Japan	100%
SPI Renewables Italy S.r.l.	Italy	100%
ITALSOLAR S.r.l.	Italy	100%
SPI Renewables Energy (Luxembourg) PLC S.à r.l.	Luxembourg	100%
Solar Juice (HK) Limited	Hong Kong	100%
SP Orange Power (HK) Limited	Hong Kong	100%
SPI Group Holding Co. Limited	Hong Kong	100%

SPI Investments Holding Limited	BVI	100%
SolarJuice Co., Ltd	Cayman	100%
Solarjuice American Inc.	US	100%
ROOFS4AMERICA INC	US	100%
SOLAR4AMERICA INC	US	100%
Solarjuice Distributions Inc.	US	100%
Solar4America Franchising Inc.	US	100%
Solar4america Techonology Inc.	US	100%
Solar Juice Holding Pte. Ltd	Singapore	100%
Solar Juice (SG) Pte. Ltd	Singapore	100%
Solar Juice (MY) SDN. BHD	Malaysia	100%
Solar Juice Pty Ltd	Australia	80%
Solar Juice PPA Pty Ltd	Australia	80%
Jollyfarming Inc.	US	100%
Orange Power Co.,Ltd.	Cayman	100%
Orange Power USA Inc	US	100%
OP OpCo I, LLC	US	100%
OP Solar I, LLC	US	100%
OPP I, LLC	US	100%
SPI Oregon I, LLC	US	100%
SPI Orange Co., Ltd	Cayman	100%
MA Lovers Land Solar,LLC	US	100%
Renewable Energy Acquisition Corp.	US	100%
Shorewood Solar LLC	US	100%
SEM WaferTech Inc.	US	100%
EdisonFuture Inc.	US	100%
Phoenix Motor Inc	US	82.6%
Phoenix Cars LLC	US	82.6%
Phoenix Motorcars Leasing	US	82.6%
Edisonfuture Motor,Inc.	US	82.6%

Ridezoomers Inc.	US	100%
SP Orange Power (Cyprus) Limited	Cyprus	100%
Heliostixio S.A	Greece	100%
Heliohrixi S.A.	Greece	100%
THERMI SUN S.A.	Greece	100%
Solar Town LLC	US	100%
Manchester Solar ,LLC	US	100%

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Belvedere Solar LLC	US	100%
Dover Solar LLC	US	100%
Clayfield Solar LLC	US	100%
Waterford Solar LLC	US	100%
Solar Mining Inc.	US	100%
1215542 B.C. LTD.	Canada	100%
Knight AG Holding Co., Ltd. (Cayman)	Cayman	100%
Knight Holding Corporation	US	100%
Knight AG Sourcing Inc.	US	100%
CBD and Hemp Group Co.,Ltd.	US	100%
Jollyfarming Inc.	US	100%
Sinsin Renewable Investment Limited (Malta)	Malta	100%
Astraios Energy SA	Greece	100%
Jasper PV Makedonia SA	Greece	100%
Photovoltaica Parka Veroia 1 Malta Limited	Malta	100%
Photovoltaica Parka Veroia I AE	Greece	100%
Veltimo Ltd(Cyprus)	Cyprus	100%
Orion Energy SA	Greece	100%
SPI HELLAS	Greece	100%
Thelmicco Limited	Cyprus	100%

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INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statement of SPI Energy Co., Ltd. on Form S-8 [FILE NO. 333-147246, FILE NO. 333-203917, FILE NO. 333-250024, and FILE NO. 333-269558] of our report dated April 14, 2023, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audits of the consolidated financial statements of SPI Energy Co., Ltd. as of December 31, 2022 and 2021 and for the years ended December 31, 2022 and 2021, which report is included in this Annual Report on Form 10-K of SPI Energy Co., Ltd. for the year ended December 31, 2022.

/s/ Marcum Asia CPAs LLP

Marcum Asia CPAs LLP
New York, New York
April 14, 2023

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

I, Xiaofeng Peng, certify that:

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

Date: April 14, 2023

/s/ Xiaofeng Peng
Xiaofeng Peng
Chief Executive Officer
(Principal executive officer)

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13A-14(A) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Janet Chen, certify that:

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

Date: April 14, 2023

/s/ Janet Chen
Janet Chen
Chief Financial Officer
(Principal financial and accounting officer)

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

In connection with the Annual Report of SPI Energy Co., Ltd. (the "Company") on Form 10-K for the year ended December 31, 2022 as filed with the Securities and Exchange Commission (the "Report"), each of the undersigned, in the capacities and on the dates indicated below, hereby certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

Date: April 14, 2023

/s/ Xiaofeng Peng
Xiaofeng Peng
Chief Executive Officer
(Principal executive officer)

Date: April 14, 2023

/s/ Janet Chen
Janet Chen
Chief Financial Officer
(Principal financial and accounting officer)