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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2019

OR

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

For the transition period from _____ to _____.

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Date of event requiring this shell company report _____

Commission file number: 001-37678

SPI Energy Co., Ltd.

(Exact name of Registrant as specified in its charter)

N/A

(Translation of Registrant's name into English)

Cayman Islands

(Jurisdiction of incorporation or organization)

**#1128, 11/F, No. 52 Hung To Road, Kwun Tong, Kowloon,
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(Address of principal executive offices)

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(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Trading Symbol	Name of each exchange on which registered
Ordinary Shares, par value \$0.0001 per share	SPI	(The NASDAQ Global Select Market)

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None
(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

14,837,469 ordinary shares as of June 29, 2020

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

☐ Yes ☒ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

☐ Yes ☒ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

☒ Yes ☐ No

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

Large accelerated filer ☐Accelerated filer ☐Non-accelerated filer ☒Emerging Growth Company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, 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. ☐

[†] The term “new or revised financial accounting standard” refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

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

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☒International Financial Reporting Standards as issued by the International Accounting Standards Board ☐Other ☐

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

☐ Item 17 ☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

☐ Yes ☒ No

Explanatory Note

As a result of the global outbreak of the COVID-19, SPI Energy Co., Ltd. (the “Company”) was unable to meet the original filing deadline of this Annual Report on Form 20-F (the “Annual Report”). The Company’s business and facilities are located in Australia, Italy, US, Greece, Hong Kong and Japan. In order to avoid the risk of the virus spreading, the Company has been following the recommendations of local health authorities to minimize exposure risk for its employees, including the temporary closures of its corporate offices, having employees work remotely and travel restrictions or suspension. As a result, the Annual Report could not be completed by the original filing deadline.

Because the outbreak of COVID-19 prevented the Company from filing the Annual Report on a timely basis, the Company relied on the order issued by the U.S. Securities and Exchange Commission dated March 25, 2020 (Release No. 34-88465) (the “SEC Order”), providing conditional relief to public companies that are unable to timely comply with their filing obligations as a result of the outbreak of COVID-19 and extending the original due date by 45 days as permitted by the SEC Order.

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CONVENTIONS THAT APPLY TO THIS ANNUAL REPORT

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 20-F to:

- “we,” “us,” “our Company,” “our” 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;
- “2017,” “2018” and “2019” refers to our fiscal years ended December 31, 2017, 2018 and 2019, 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;
- “DG” refers to distributed generation;
- “EPC” refers to engineering, procurement and construction services;
- “EUR” or “Euro” refers to the legal currency of the countries comprising the euro area;
- “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.;
- “O&M” refers to operating and maintenance;
- “PP” 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;
- “RMB” or “Renminbi” refers to the legal currency of China;
- “Shares” or “ordinary shares” refers to our ordinary shares, par value \$0.0001 per share;
- “SPI” refers to Solar Power, Inc., a company incorporated under the laws 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, “megawatt” or “MW” means one million watts and “gigawatt” or “GW” means one billion watts.

Names of certain companies in this annual report are translated or transliterated from their original Chinese legal names.

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

Share and per share amounts reflect a one-for-ten reverse stock split that took place in November 2017 and a one-for-ten reverse stock split that took place on November 2018.

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 certified for customs purposes by the Federal Reserve Bank of New York as of December 31, 2019, which was AUD 0.7030 to \$1.00, EUR0.8907 to \$1.00, GBP0.7536 to \$1.00, JPY108.67 to \$1.00 and RMB6.9618 to \$1.00, respectively, unless indicated otherwise. No representation is intended to imply that the Australian Dollar, Euro, British Pounds, Japanese Yen or Renminbi could have been, or could be, converted, realized or settled into U.S. dollars at the foregoing rates or any other rate.

PART I

Safe Harbor

This annual report on Form 20-F for the fiscal year ended December 31, 2019, 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 20-F, 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 20-F are based upon information available to us as of the filing date of this annual report on Form 20-F. 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:

- an inability to realize expected benefits of the restructuring within the anticipated time frame, or at all;
- 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 3. Key Information —D. Risk Factors” and elsewhere in this annual report on Form 20-F. You should carefully consider the risks and uncertainties described under this section.

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not Applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not Applicable.

ITEM 3. KEY INFORMATION**A. Selected Financial Data****Our Selected Consolidated Financial Data**

The following selected consolidated statements of operations data for the years ended December 31, 2017, 2018 and 2019 and the selected consolidated balance sheet data as of December 31, 2018 and 2019 are derived from our audited consolidated financial statements included elsewhere in this annual report. The selected consolidated statements of operations data for the years ended December 31, 2015 and 2016 and the consolidated balance sheet data as of December 31, 2015, 2016 and 2017 are derived from our audited consolidated financial statements not included in this annual report. The selected consolidated financial data should be read in conjunction with, and are qualified in their entirety by reference to, our audited consolidated financial statements and related notes and “Item 5. Operating and Financial Review and Prospects” included elsewhere in this annual report. Our consolidated financial statements are prepared and presented in accordance with accounting principles generally accepted in the United States of America, or U.S. GAAP. The historical results are not necessarily indicative of results to be expected in any future periods.

On January 1, 2017, we deconsolidated Sinsin Renewable Investment Limited, a Malta company (“Sinsin”) due to loss of control.

On December 10, 2018, the SPI China (HK) Limited and all China business were divested.

	For the year ended December 31,				
	2015	2016	2017	2018	2019
		*	*	*	
Consolidated Statements of Operations Data:					
Net sales:					
Net sales	190,510	114,602	121,520	125,582	97,883
Total net sales	190,510	114,602	121,520	125,582	97,883
Cost of goods sold:					
Cost of goods sold	176,469	102,147	111,428	114,525	90,693
Provision for losses on contracts	5,932	385	—	—	—
Total cost of goods sold	182,401	102,532	111,428	114,525	90,693
Gross profit	8,109	12,070	10,092	11,057	7,190
Operating expenses:					
General and administrative	76,747	13,728	13,994	12,225	15,158
Sales, marketing and customer service	39,428	3,238	2,944	2,285	2,398
Provision (reverse) for doubtful accounts, notes and other receivables	45,328	7,106	1,693	(501)	4,115
Impairment charges on property, plant and equipment	10,853	79,598	740	—	2,235
Impairment charges on project assets	—	—	—	—	2,455
Total operating expenses	172,356	103,670	19,371	14,009	26,361
Operating loss	(164,247)	(91,600)	(9,279)	(2,952)	(19,171)
Other income (expense):					
Interest expense	(9,275)	(3,494)	(8,087)	(6,665)	(3,923)
Interest income	2,218	802	384	320	155
Gain on extinguishment of convertible bonds	—	—	7,121	—	—
Change in fair value of derivative liability	(15,650)	(2,328)	—	—	285
Reversal (accrual) of tax penalty	—	—	(9,670)	—	6,890
Gain on troubled debt restructuring	—	—	—	1,887	—
Loss on investment in affiliates	(2,493)	(6,296)	(2,214)	—	—
Net foreign exchange gain(loss)	4,412	646	(5,141)	1,118	1,261
Others	628	847	509	487	(553)
Total other income (expense), net	(20,160)	(9,823)	(17,098)	(2,853)	4,115
Loss from continuing operations before income taxes	(184,407)	(101,423)	(26,377)	(5,805)	(15,056)
Income taxes expense	673	606	137	332	92
Loss from continuing operations	(185,080)	(102,029)	(26,514)	(6,137)	(15,148)
Loss from discontinued operations, net of tax	—	(118,939)	(64,445)	(6,122)	—
Net loss	(185,080)	(220,968)	(90,959)	(12,259)	(15,148)
Net loss per common share:					
Basic and Diluted	(30)	(34)	(13)	(1.7)	(1.20)
Net loss from continuing operations per common share:					
Basic and Diluted	(30)	(16)	(4)	(0.9)	(1.20)
Net loss from discontinued operations per common share:					

Basic and Diluted	<u>—</u>	<u>(18)</u>	<u>(9)</u>	<u>(0.8)</u>	<u>—</u>
Weighted average number of common shares used in computing per share:**					
Basic and Dilutive	<u>6,120,471</u>	<u>6,415,616</u>	<u>6,826,633</u>	<u>7,262,023</u>	<u>12,733,062</u>

	As of December 31,				
	2015	2016	2017	2018	2019
	*	*	*	*	
Summary Consolidated Balance Sheet Data:					
Cash and cash equivalents continuing	6,021	2,024	2,238	4,141	2,764
Current assets of continuing operations	91,869	70,160	78,879	73,883	56,489
Current assets of discontinued operations	301,700	84,173	52,433	—	—
Total current assets	393,569	154,333	131,312	73,883	56,489
Total assets	709,570	361,818	317,311	188,728	178,853
Current liabilities of continued operations	156,976	160,449	172,990	166,531	170,017
Current liabilities of discontinued operations	316,575	170,079	213,316	—	—
Total current liabilities	473,551	330,528	386,306	166,531	170,017
Total liabilities	493,012	374,746	414,955	188,658	184,328
Total equity (deficit)	216,558	(12,928)	(97,644)	70	(5,475)
Total liabilities and equity	709,570	361,818	317,311	188,728	178,853

* The China business was discontinued operations after the disposal, the consolidated statements of operations data for the years ended December 31, 2016 and 2017 and the consolidated balance sheet data as of December 31, 2015, 2016 and 2017 were reclassified to conform to current year presentation, while the consolidated statements of operations for the years ended December 31, 2015 was not reclassified as management considered it not cost-effective to do so.

**The shares are presented on a retroactive basis to reflect the Company's Reverse Stock Splits.

Exchange Rate Information

Not Applicable.

B. Capitalization and Indebtedness

Not Applicable.

C. Reasons for the Offer and Use of Proceeds

Not Applicable.

D. 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 Business and Industry

We have incurred net losses, experienced net cash outflows from operating activities and recorded working capital deficit. If we do not effectively manage our cash and other liquid financial assets and execute our liquidity plan, we may not be able to continue as a going concern.

We incurred net losses of \$91.0 million, \$12.3 million and \$15.1 million in 2017, 2018 and 2019, respectively. We had an accumulated deficit of \$585.4 million as of December 31, 2019. We also had a working capital deficit of \$113.5 million as of December 31, 2019. In addition, we have substantial amounts of debts that became due in 2017, 2018 and 2019.

Historically, we have relied primarily on cash from our operations, bank borrowings, private placements and financial leases to fund our operations. We expect that our existing cash and cash equivalents and cash flows from operating and financing activities will be sufficient to meet our anticipated working capital requirements and capital expenditure for at least the next 12 months, but generally inadequate to pursue new project acquisition or development initiatives without additional capital. The timing and amount of our working capital and capital expenditure requirements may vary significantly depending on numerous factors, such as the timeliness of payments from our customers. We have filed liens to secure customer payments for each of our solar projects, 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, damages from legal actions and other payments due to us. The volatility and potential deterioration of the PV market conditions and the overall global economies have also added uncertainties regarding the sustainability of the PV industry and adverse impact on the demand for our products. 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 continue as a going concern. These doubts and 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.

The report of our independent registered public accounting firm on our financial statements as of and for the year ended December 31, 2019 includes discussions on our ability to continue as a going concern. Although we have formulated a liquidity plan as summarized under Note 2 to our consolidated financial statements appearing elsewhere in this annual report, we cannot assure you that we will be able to successfully execute this liquidity 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, continued downturn in the global PV market, 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 our liquidity requirements and we may, as a result, be unable to continue as a going concern.

We have revised the assumptions underlying our existing operating plans and recognized the fact that additional actions were needed to reposition our operations to minimize our cash outflows. Therefore, we are undertaking a number of initiatives in order to conserve or generate cash on an incremental basis in 2019. For a detailed discussion of these initiatives and strategies, please see “[Item 5. Operating and Financial Review and Prospects—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 \$55.0 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, 2017. On February 12, 2017, we entered into the first amendment agreement (the “1st Amendment”) with Union Sky Holding Group Limited (“Union Sky”), one of the holders of our convertible bonds, to extend the maturity date of the bonds, pursuant to which the repayment of US\$6.6 million, US\$6.7 million and US\$6.7 million of the principal amount of the convertible bond were due by April 30, 2017, January 30, 2018 and January 30, 2019, respectively. Union Sky has the option to convert those outstanding amounts under the Convertible Bond Agreement and its 1st Amendment into the equity interest in our company at a conversion price of \$1.372 per share. We were not able to make the first payment as of April 29, 2017. We have been in communications with the holders of our convertible bonds, including Union Sky, to further extend the maturity date of the bonds, and subsequently on June 29, 2018, the Company entered into another amendment agreement (the “2nd Amendment”) with the Union Sky and Magical Glaze Limited (the “MGL”), a company incorporated under the laws of British Virgin Islands, pursuant to which the Union Sky transferred all the rights and obligations under the Convertible Bond Agreement and 1st Amendment to MGL, and the maturity date of such bond was extended. According to the 2nd Amendment, the repayments of US\$6.6 million, US\$6.7 million and US\$6.7 million of the principal amount of the bond and interest thereon should be due by December 2019, June 2020 and

December 2020, respectively. As of the date of this annual report, we missed the December 2019 repayment and expect to miss the June 2020 repayment. We have been working on negotiating a third amendment to the Convertible Bond Agreement but have not yet obtained a further extension from the bond holders.

If we are unable to enter into settlement arrangements with all of the parties with whom we are in default, we could be forced to cease operations.

Certain minority stockholders of Solar Juice Pty Ltd ("Solar Juice Australia"), our 80% owned subsidiary in Australia, took certain actions that, if effective, would result in us owning only a minority interest in Solar Juice Australia, which would mean that we no longer have control of Solar Juice Australia and no longer be able to consolidate its financial results into our financial statements.

In May, 2020, certain minority stockholders of Solar Juice Australia took certain actions that, if effective, would result in our owning only a minority interest in Solar Juice Australia, which could cause us to no longer be able to control Solar Juice Australia or consolidate its financial results into our financial statements. This would result in a material adverse effect on our financial results since Solar Juice Australia accounts for 82.3% of our revenues and 15.7% of our assets.

In May 2020, Solar Juice Co. Ltd. ("Solar Juice Co"), a wholly owned subsidiary of the Company, in its capacity as shareholder of Solar Juice Australia together with Mr. Kun Fong Lee and Mr. Jinhan Zhou (who hold shares in Solar Juice as trustee for Solar Juice Co) ("SPI Shareholders") commenced proceedings in the Federal Court of Australia as plaintiffs against its other shareholders and some of its other directors and purported directors and against Solar Juice Australia ("Defendants") in relation to a purported new rights issue undertaken by Solar Juice Australia, the purported removal by those other shareholders of Mr. Kun Fong Lee and Mr. Jinhan Zhou as directors of Solar Juice Australia and the purported appointment of an additional director. The SPI Shareholders allege that the purported new rights issue and the subsequent purported removal and appointment of directors are invalid and ineffective and therefore should be set aside. If effective, the purported rights issue will result in the SPI Shareholders' shareholding in Solar Juice Australia being reduced from 80% to 40%.

If our lawsuit is not successful, our financial results and stock price will be materially adversely affected.

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 June 29, 2020, we own and operate 16.8 MW of solar projects and have 19.636 MW 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.

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.

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.

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. This limited operating history of developing and operating solar projects under our IPP and BT model 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. In addition, in expanding into these new business areas, we may be competing against companies that have substantially more experience than we do with respect to solar projects under our IPP and BT models. 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.

Due to the change in our strategic focus and revenue generating efforts in 2014, our prior operating history and historical operating results may not provide a meaningful basis for evaluating our business, financial performance and prospects.

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, 2019, we had an accumulated deficit of approximately \$585.4 million. While we have had decreasing losses year over year, we may not be able to achieve or maintain profitability in the near future.

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. Since 2014, 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.

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 bank for project loan. As of December 31, 2019, we had \$2.9 million in outstanding short-term borrowings (and the current portion of long-term borrowings) and \$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 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.

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. 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.

We act as the general contractor for our customers for the provision of EPC services, and are subject to risks associated with construction, delays and other contingencies, which could have a material adverse effect on our reputation, business and results of operations.

Historically, we have generated a significant portion of our revenue from the provision of EPC services. We generally enter into fixed-price EPC contracts under which we act as the general contractor for our customers in connection with the installation of their solar power systems. All essential costs are estimated at the time of entering into the EPC contracts for a particular project, and are reflected in the overall fixed-price that we charge our customers. These cost estimates are preliminary and may or may not be covered by contracts between us or our subcontractors, suppliers or other parties to the project. In addition, we engage qualified and licensed subcontractors for the construction of our EPC projects. Shortages of such skilled labor could significantly delay a project or otherwise increase our costs. Should miscalculations in project planning or delay in execution occur (including those due to unexpected increases in inflation, commodity prices or labor costs), we may not be able to achieve our expected margins or recover our costs.

In addition, our EPC contracts generally provide for performance milestones. Delays in supply of PV module or components, construction delays, unexpected performance problems in electricity generation or other events may cause us to fail to meet these performance criteria, resulting in unanticipated and severe revenue and earnings losses and financial penalties. If we are unable to complete the development of a solar project, or fail to meet one or more agreed target construction milestone dates, any agreed upon system-level capacity or energy output guarantees or warranties (including, for some projects, twenty-five year performance warranties) or other terms under our EPC contracts, or the solar projects we develop cause grid interference or other damage, we may be subject to termination of such contracts or significant damages, penalties and/or other obligation under the EPC agreements or other agreements relating to the projects (including obligations to repair, replace and/or supplement additional modules and balance of system materials for the projects), particularly if our liabilities are not capped under the terms of such agreements, and we may not be able to recover our investment in the project. The occurrence of any of these events could have a material adverse effect on our reputation, business and results of operations.

We generally recognize revenue from EPC services on a “cost-based input method” and payments are due upon the achievement of contractual milestones and any delay or cancellation of a project could adversely affect our business.

We generally recognize revenue from our EPC services on a “cost-based input method,” and as a result, revenues from our EPC services are driven by the performance of our contractual obligations, which is in turn generally driven by timelines of the installation of solar power systems at customer sites. Such arrangement could result in unpredictability of revenue and in the near term, a revenue decrease. As with any project-related business, there is potential for delays within any particular customer project. Variation of project timelines and estimates may impact our ability to recognize revenue in a particular period. In addition, certain EPC contracts may provide for payment milestones due at specified stages throughout the development of a project. Because we must invest substantially in a project in advance of achieving these milestones and receiving payments, delay or cancellation of a project could adversely affect our business and 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.

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. For instance, the recent decline in oil prices and prolong low prices have 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.

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.

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 sufficient demand for solar projects develops slower 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.

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.

We have since 2014 commenced our global project development business under our IPP or BT models by ramping up our portfolio of solar projects. 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.

We may encounter unexpected difficulties when developing solar power projects.

In 2014, we commenced our global project development business by ramping up our portfolio of solar projects under both our IPP, BT and EPC models. The attributable capacity of our projects in operation is 16.8 MW, projects under construction 19.636 MW, and had an aggregate of 10.24MW of projects in announced pipeline as of June 29, 2020. See “[Item 4. Information on the Company—B. Business Overview—Our Global Project Development Business.](#)” 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.

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.

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.

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.

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, 2019 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.

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.

Since 2014, we started acquiring solar projects across different stages of development globally and to hold some of these acquired projects under our IPP model. 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.

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.

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.

We may be subject to product or strict liability claims if the provision of our EPC 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 EPC services, or the solar projects we sell under our BT 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.

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.

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.

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. 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 downstream PV industry. 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.

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.

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 identified material weaknesses in our internal control over financial reporting, and our chief executive officer concluded that our disclosure and internal controls and procedures were not effective as of December 31, 2019. See [“Item 15. Controls and Procedures”](#) for more information. There can be no assurance as to how quickly or effectively we can remediate the material weaknesses in our internal control over financial reporting or that additional material weaknesses will not be identified in the future.

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.

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 global cryptocurrency mining services market is highly competitive and fragmented with low barriers to market.

Although the market for providing services to cryptocurrency miners is new and evolving, the barriers to entry are quite low. Except for having the financial resources to set up a facility, no specialized technology or know-how required. Therefore, if cryptocurrency mining remains profitable, we expect additional competitors to enter the market, some of whom may have greater resources than we do.

The prices of Bitcoin and other cryptocurrencies have been fluctuating wildly in the last few months. If there is fewer people who want to conduct cryptocurrency mining operations due to the wild fluctuation, the demand for our services will decline.

The prices of cryptocurrencies have been fluctuating wildly in the last few months. Such fluctuation may make cryptocurrency mining less profitable. If the price of cryptocurrencies falls or does not increase, fewer people are likely to conduct cryptocurrency mining operations, which would reduce the demand for our services.

Blockchain technology and cryptocurrency are in the early stages of development and it is difficult to predict how the market for cryptocurrencies will develop.

Blockchain technology and cryptocurrency are in the early stages of development and it is difficult to predict how the market for cryptocurrencies will develop. There are significant factors which may inhibit the growth of these markets, including:

- volatility in the market price of cryptocurrencies;
- the implementation of regulations on cryptocurrency markets or technology; and
- the erosion or loss of user confidence in Bitcoin and other cryptocurrencies could.

Any of these factors could significantly limit the growth of our business.

We need to access a large quantity of power at a reasonable cost in order to provide our cryptocurrency mining services; if we are unable to access such power sources, we will not be able to continue providing cryptocurrency mining services profitably.

We need to access a large quantity of power at a reasonable cost in order to provide our cryptocurrency mining services, and we do not have any long-term contract for the provision of power at specified prices. As competition in this area increases, we may not be able to access power at reasonable costs or at all. If we are unable to access new power sources, or the price of our current power sources significantly increase, we will not be able to continue providing cryptocurrency mining services profitably.

The hemp and CBD industries are evolving yet highly regulated and we must anticipate and respond to changes and risks.

In September 2019, the Company launched a hemp and Cannabidiol (“CBD”) businesses and as of the date of this annual report, our hemp and CBD businesses have no revenue derived from this business. The hemp and CBD industries are not yet well-developed, and many aspects of the industries’ development and evolution cannot be accurately

predicted. In addition, the hemp and CBD businesses are heavily regulated in the jurisdiction(s) where we carry on such businesses. Although the hemp and CBD businesses contribute nil to our total revenue, 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. You should carefully consider that there are other risks that cannot be foreseen or are not described herein, which could affect Company's business and financial performance.

DEA Regulation of CBD Varies Depending on the Concentration of THC

Under Drug Enforcement Administration (DEA) regulations, marijuana is a Schedule 1 drug not approved as a medication in the United States; however, hemp has been distinguished from marijuana under the definition revised in 2018. Hemp is defined as the plant *Cannabis sativa* L. and any part of that plant — including the seeds and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not — with a THC concentration of not more than 0.3 percent on a dry weight basis.

U.S. Food and Drug Administration (FDA) Regulations Do Not Permit CBD as a Food Additive or Dietary Supplement

Analysis of the potential for regulatory impact on any type of CBD product is fact-specific and requires close evaluation of several factors, including the type of product (e.g., food, dietary supplement, or cosmetic), product's labeling, and the existing compliance structure of the product developer or manufacturer. The FDA regulates CBD if it is used as a food additive, a dietary supplement or in cosmetic products, or if it is advertised as a drug.

Rapidly Changing State Laws May Impose Further Restrictions on CBD Products

Where CBD products are sold or manufactured, it is important to review applicable state law to determine any further restrictions on CBD. For instance, the North Carolina Department of Agriculture and Consumer Services recently announced it would send letters to businesses notifying them that the sale of CBD in food, drinks and animal food violates state and federal law. Further, in February 2019, Maine and New York announced that restaurants and other retailers may not sell products containing CBD and that the states would begin enforcing these restrictions. These state restrictions may significantly impact overall sales of CBD products as the regulatory landscape continues to evolve.

Avoid Certain Advertising and Labeling Claims for CBD Products

Marketing claims about the therapeutic benefits of CBD may inadvertently subject CBD product manufacturers to FDA's drug regulations. Claims that CBD can treat or mitigate a disease or condition, for instance, may run afoul of FDA's position on CBD product marketing. To date, the FDA has approved only one drug directly using CBD - Epidiolex - which treats two rare forms of childhood epilepsy. The FDA has not determined that CBD is safe or effective for treating any other particular disease or condition. Accordingly, companies should avoid making claims that CBD will aid in the treatment of any particular disease or condition or provide any particular health benefits. FDA further clarified that it will continue to aggressively pursue companies marketing CBD products with "egregious and unfounded claims that are aimed at vulnerable populations."

Federal Regulation of CBD Will Continue to Evolve

The FDA's position on CBD is not static, and potential investors should continue to monitor the evolving federal landscape. The FDA recently held a public hearing to obtain scientific data and information about the safety, manufacturing, product quality, marketing, labeling and sale of products containing cannabis or cannabis-derived compounds. The FDA also announced that it is forming a high-level internal agency working group to explore potential pathways for dietary supplements and/or conventional foods containing CBD to be lawfully marketed. The group will consider what statutory or regulatory changes might be needed and the likely impact of such marketing on public health. As stakeholders weigh in on this issue, FDA's position on this topic likely will continue to evolve.

Covid-19 continues to impact on alfalfa hay transportation

With Asia's increasing demand for American alfalfa hay, we have recognized the importance of exporting to the Asian market. However, the uncertainty around the coronavirus has disrupted global markets and the U.S. market has not been immune. Major oceanic carriers have reduced the frequency of their shipments, disrupting our supply chain. This required U.S. exporters to reschedule shipments and work to find boat space for new shipments. Fortunately, there is sustained demand from major importing countries, but logistics will be a challenge in the coming months.

U.S.-China trade disruption remains unclear

The outcome of the U.S.-China trade war remains unclear. There might be future disruptions in the market with potential for tariffs being set on our products. This will affect the Chinese demand for our products if our products become more expensive than Chinese local producers when tariffs are added to our prices. However, alfalfa hay is exempted from tariffs since September 2019 for one year so we are currently unaffected.

Weather Condition may lead to decline in Hay production

Weather conditions are a huge factor affecting alfalfa hay production. Increasingly random weather patterns due to global warming could post a potential risk to production levels.

Risks Related to COVID-19

Our business and financial results may be materially adversely affected by the current COVID-19 pandemic outbreak.

The pandemic of a novel coronavirus (COVID-19) has resulted in a widespread health crisis that has adversely affected the economies and financial markets worldwide. Government efforts to contain the spread of the coronavirus through lockdowns of cities, business closures, restrictions on travel and emergency quarantines, among others, and responses by businesses and individuals to reduce the risk of exposure to infection, including reduced travel, cancellation of meetings and events, and implementation of work-at-home policies, among others, have caused significant disruptions to the global economy and normal business operations across a growing list of sectors and countries.

Our operating results substantially depend on revenues derived from sales of PV project assets, provision of electricity and our Australian subsidiary's trading of PV components. As the COVID-19 spread continues, the measures implemented to curb the spread of the virus have resulted in supply chain disruptions, insufficient work force and suspended manufacturing and construction works for solar industry. One or more of our customers, partners, service providers or suppliers may experience financial distress, delayed or defaults on payment, file for bankruptcy protection, sharp diminishing of business, or suffer disruptions in their business due to the outbreak. These preventative measures have also impacted our daily operations. The efforts enacted to control COVID-19 have placed heavy pressure on our marketing and sales activities. Moreover, due to the decrease in prices of crude oil, the demand for solar energy can decrease in the near future. We continue to assess the related risks and impacts COVID-19 pandemic may have on our business and our financial performance. In light of the rapidly changing situation across different countries and regions, it remains difficult to estimate the duration and magnitude of COVID-19 impact. Until such time as the COVID-19 pandemic is contained or eradicated and global business return to more customary levels, our business and financial results may be materially adversely affected.

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 and Australia, 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.

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.

Concerns persist regarding the debt burden of certain Eurozone countries and their ability to meet future financial obligations, the overall stability of the Euro and the suitability of the Euro as a single currency given the diverse economic and political circumstances in individual Eurozone countries. These concerns or market perceptions concerning these and related issues could adversely affect the value of our Euro-denominated assets and obligations and lead to future economic slowdowns.

Risks Related to Our Ordinary Shares

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 14,837,469 ordinary shares outstanding, including 4,289,340 ordinary shares, or approximately 28.9% 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 8. Financial Information — Consolidated Statements and Other Financial Information—Legal and Administrative 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), a judgment obtained in such jurisdiction will be recognized and enforced in the courts of the Cayman Islands at common law, without any re-examination of the merits of the underlying dispute, by an action commenced on the foreign judgment debt in the Grand Court of the Cayman Islands, provided such judgment (a) is given by a foreign court of competent jurisdiction, (b) imposes on the judgment debtor a liability to pay a liquidated sum for which the judgment has been given, (c) is final, (d) is not in respect of taxes, a fine or a penalty, and (e) was not obtained in a manner and is not of a kind the enforcement of which is contrary to natural justice or the public policy of the Cayman Islands. 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 will 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.

We rely on the foreign private issuer exemption for certain corporate governance requirements under the NASDAQ Stock Market Rules, or the NASDAQ Rules, including the majority independent board requirement. This may afford less protection to holders of our ordinary shares and ADSs.

As a foreign private issuer, we are exempt from certain corporate governance requirements of NASDAQ. We are required to provide a brief description of the significant differences between our corporate governance practices and the corporate governance practices required to be followed by U.S. domestic issuers under the NASDAQ Rules. The standards applicable to us are considerably different from those applied to U.S. domestic issuers. For instance, we are not required to:

- have a majority of the board of directors be comprised of independent directors;
- have a compensation committee that is comprised solely of independent directors;
- having a nomination and corporate governance committee that is comprised solely of independent directors;
- have executive compensation be determined by independent directors or a committee of independent directors;
- have director nominees be selected, or recommended for selection by the board of directors, by independent directors or a committee of independent directors;
- hold an annual meeting of shareholders no later than one year after the end of our fiscal year-end; and
- have shareholder approval for private placement of Company's common stocks at a price less than the greater of book or market value which together with sales by officers, directors or Substantial Shareholders of the Company equals 20% or more of common stock or 20% or more of the voting power outstanding before the issuance.

We are not required to, and will not voluntarily meet, these requirements. For example, 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 law of our home country, the Cayman Islands, does not require a majority of our board of directors be composed of independent directors. We intend to follow our home country practice with regard to the composition of the board of directors.

As a result, holders of our ordinary shares may not have the same protection afforded to shareholders of companies that are subject to all of NASDAQ's corporate governance requirements. For a description of the material corporate governance differences between the NASDAQ Rules and Cayman Islands law, see "[Item 16G. Corporate Governance](#)."

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Our legal and commercial name is SPI Energy Co., Ltd. Our principal executive office is located at #1128, 11/F, No. 52 Hung To Road, Kwun Tong, Kowloon, Hong Kong SAR, China. Our telephone number at this address is +852 2291 6020 and our fax number is +852 2291 6030. Our registered office is situated at 4th Floor, Harbour Place, 103 South Church Street, PO Box 10240, George Town, Cayman Islands.

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

We raised a significant amount of cash for our working capital purposes from the issuance of shares of SPI's common stock and convertible notes in 2014, 2015 and 2016 to non-U.S. investors in private placements. In those periods, we entered into various private placement share purchase agreements and option agreements with a number of non-U.S. investors and issued approximately 14.6 million unregistered shares or options to purchase shares of SPI's common stock in reliance on Regulation S of the Securities Act, or Regulation S, mostly at a per share purchase price benchmarked to the prevailing trading price of SPI's shares at the respective dates of these agreements, and raised an aggregate of \$401.58 million. We also raised \$55.0 million of cash by issuing unregistered convertible notes to non-U.S. investors in reliance of Regulation S promulgated under the U.S. Securities Act of 1933, as amended ("Regulations S") in 2014 and 2015. In January 2016, we raised \$5 million by issuing 2.5 million ordinary shares, in reliance on Regulation S, to a non-U.S. investor who exercised an option to purchase our ordinary shares pursuant to an option agreement with our Company. In September 2016, we entered into share purchase agreements with certain existing shareholders, including certain members of our management and other investors, pursuant to which we agreed to issue and sell an aggregate of 386.1 million ordinary shares for a total consideration of approximately \$100 million. In January 2017, we completed approximately \$0.881 million of its \$100 million private placement. The investors in these transactions have advised us that they no longer wish to close on these transactions.

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.

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 depositary 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 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".

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

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 HELIOSTIXIO S.A., from THERMI Taneo Venture Capital Fund ("TTVCF"), for a total consideration of EUR 16.8 million, subject to certain adjustments. The transaction is subject to customary closing conditions. 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 HELIOSTIXIO 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 in 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.

On December 10, 2018, we divested all our business and operations in China for nominal consideration due to the significant liabilities in the business.

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.

On September 26, 2019, the Company completed the closing on 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 16, 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, strengthening the Company’s balance sheet and 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.

Nasdaq Compliance

On March 23, 2020, the Company received a notification letter from Nasdaq indicating that the Company is not in compliance with NASDAQ Listing Rule 5450(b)(3)(C) for continued listing because the market value of its publicly held shares (“MVPHS”) was less than \$15 million. Normally, the Company would be eligible for a 180 day compliance period to regain the compliance. On April 17, 2020, the Company received a notification letter from Nasdaq indicating that the Company will have 156 calendar days from July 1, 2020, or until December 3, 2020 to regain compliance with the Nasdaq’s market value of publicly held shares (“MVPHS”) requirement. The Notice also stated that Nasdaq has determined to toll the compliance periods for bid price and MVPHS requirements (collectively, the “Price-based Requirements”) through June 30, 2020. As a result, companies presently in compliance periods for any Price-based Requirements will remain at that same stage of the process and will not be subject to being delisted for these concerns. Starting on July 1, 2020, companies will receive the balance of any pending compliance period in effect at the start of the tolling period to regain compliance. Accordingly, since the Company had 156 calendar days remaining in its MVPHS compliance period as of April 16, 2020, it will, upon reinstatement of the Price-based Requirements, still have 156 calendar days from July 1, 2020, or until December 3, 2020, to regain compliance. The Notices have no immediate effect on the listing of the Company’s securities. The Company can regain compliance at any time before December 3, 2020 by evidencing compliance with the MVPHS requirement for a minimum of 10 consecutive trading days.

On April 28, 2020, the Company received a notification letter from Nasdaq notifying the Company that its bid price per ordinary share had been below \$1.00 for a period of 30 consecutive business days and, therefore, that the Company did not meet the minimum bid price requirement set forth in Rule 5450(a)(1) of the Nasdaq Listing Rules. Normally, the Company would be eligible for a 180 day compliance period to regain the compliance.

Given current market conditions, Nasdaq previously determined to toll the compliance periods for Price-based Requirements through June 30, 2020. As a result, the Company will, upon reinstatement of the Price-based Requirements, still have 180 calendar days from July 1, 2020, or until December 28, 2020, to regain compliance.

The Notices have no immediate effect on the listing of the Company’s securities. The Company can regain compliance at any time before December 28, 2020 by evidencing compliance with the bid price requirement for a minimum of 10 consecutive trading days.

B. Business Overview

We are a global provider of PV solutions for business, residential, government and utility customers and investors. We provide a full spectrum of EPC services to third party project developers, as well as develop, own and operate solar projects that sell electricity to the grid in multiple countries, including the U.S., the U.K., Greece, Japan and Italy. Prior to 2014, we were primarily engaged in providing EPC services to developers in the U.S. We were also engaged in the development, manufacture and marketing of a variety of PV modules, the key components of solar parks that convert sunlight into electricity, and balance-of-system components, including our in-house brand. We have discontinued our manufacturing business and liquidated our research and development function. Beginning in 2014, we expanded 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 and derive electricity generation revenue from our independent power producer model, or IPP model, and projects that we plan to sell in the future when we are presented with attractive opportunities under our build-and-transfer model, or BT model. We grow our project portfolio primarily through acquisitions and act as a secondary developer for the projects which are under construction or in pipeline upon acquisition. Solar projects in our current portfolio include projects at all stages of development, including projects in operation, projects under construction and projects in pipeline. See “[—Our Global Project Development Business—Our Solar Project Portfolio.](#)”

For our EPC service business, the scope of our work encompasses engineering design procurement of technical components from PV module and panel manufacturers and contracting of construction and installation, which reaches both upstream and downstream along the spectrum of the solar business value chain. Our rigorous design and supply chain management as well as construction quality control enable us to design, build and deliver world-class solar system configurations with components that can work optimally together.

For our global project development business, as of June 29, 2020, we had completed a series of acquisitions of solar projects that were in operation, consisting of (i) 26.6 MW of projects in Greece, acquired in December 2014 for a total consideration of \$79.330 million including the rights to be awarded up to 360MW EPC contracts, (ii) 4.3 MW of projects in Italy, acquired in February 2015 for a total consideration of \$11.8 million, (iii) 1.082 MW, 1.988 MW and 4.4MW of projects in Greece, acquired in December 2017, March 2019 and November 2019 respectively, for a total consideration of EUR 12.88 million (\$14.46 million), (iv) 0.2744 MW of projects in Japan, acquired in July 2017 for a total consideration of JPY 110 million (\$ 0.98 million) and (v) 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.

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.

As of the date of this report, we are constructing an aggregate of 19.636 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 2021.

We had 10.24MW of projects in announced pipeline as of June 29, 2020. See “[—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.

We divested all our operations in China in December 2018 for nominal consideration due to the significant liabilities in the business.

Deconsolidation

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 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. The pre-closing restructuring resulted in: (1) SolarJuice Co., Ltd., a 100% wholly owned subsidiary of the Company, acquiring 80% of the equity interests in Solar Juice Pty Limited, a holding company which holds all the assets of the Company in Australia; (2) the Company acquiring all of the equity interests in Solar Power Inc. UK Service Limited, a holding company which holds all the assets of the Company in UK; (3) SPI Orange Power (Cyprus) Limited, a 100% wholly owned subsidiary of the Company, acquiring all of the equity interests in SPI Renewable Energy (Luxembourg) Private Limited Company S.a.r.l., a holding company which holds part of the assets of the Company in Italy; (4) SPI Orange Power (Cyprus) Limited acquiring all the equity interests in Italsolar S.r.l, a company which holds a portion of the assets of the Company in Italy; (5) the Company acquiring all of the equity interests of Sinsin, a holding company which held all the assets of the Company in Greece; and (6) SPI Group Holding Co., Ltd., a 100% wholly owned subsidiary of the Company, acquiring 97% of the equity interests in SPI Solar Japan G.K.

On December 10, 2018, the Company and the Buyer executed the bought and sold notes and instrument of transfer relating to the shares in SPI China. Upon the execution of the bought and sold notes, the equitable title to the shares in SPI China past to the Buyer and until the legal title is transferred, the Company held the shares in SPI China on trust for the Buyer. On April 30, 2019, the legal title transfer was completed and the Buyer became the owner of the shares in SPI China.

Crypto Mining Hosting

In early 2018, we launched www.uminig.io, a turnkey solution offering global crypto-mining hosting, training, sales, and repair services. As of December 31, 2019, we had 2 pilot mining sites in Canada and the U.S. We continue to look for potential investments to increase our mining capacity by the end of 2020

Hemp and CBD Business

In September 2019, the Company launched its newly established hemp and CBD business. The Company has executed a management services agreement with the Native American Agricultural Company (“NAAC”) to cultivate hemp in the Navajo Nation; and obtained licenses from the Navajo Nation to engage in lab testing, cultivation, processing, wholesale distribution, and retail sales of hemp. In January 2020, the Company completed the installation of its cannabidiol extraction and milling equipment at an approximately 25,000-sqft facility in Orange Cove, Fresno County in California. The newly installed CBD processing equipment is designed to enable the production of Hemp dry flower and Pre-roll, CBD crude oil, distillate, and isolate, serving the growers in California. The pre-production test runs of its CBD crude oil extraction and Hemp try flower and Pre-roll production process and quality control review have been completed. Currently, the Company is taking the orders from customers.

Business of Alfalfa and Other Related Agriculture Products

In May 2019, the Company announced to explore agriculture business for productions, sales or marketing of alfalfa and other related agriculture products in Arizona. Knight Holding Corporation is focused on becoming one of the largest global providers of alfalfa hay and other forage types. With China’s increasing demand for American alfalfa hay, we have recognized the importance of exporting to the Asia market. Committing ourselves to successfully becoming a major supplier of alfalfa, we have established a processing facility in Tonopah, Arizona. Our alfalfa pressing facility sits in the center of the Harquahala Valley, located in Western Maricopa County.

Engineering Design

As a critical first step in the EPC process, engineering design involves the planning of the entire solar project, from feasibility studies of the land and irradiation levels to efficient arrangement of mounting, modules and connection systems. Our technical team takes responsibility over initial solar project engineering with support from third-party contractors. The engineering design process includes the site layout and the electrical design, as well as assessment of a variety of factors in order to choose appropriate technologies and equipment for the project, particularly modules and inverters. Throughout the engineering design phase, we aim to reduce the risks, control the costs and improve the performance of our EPC projects.

Procurement and Construction

In order to focus on our core downstream development and EPC service businesses, we no longer manufacture PV modules or produce other equipment such as controllers, inverters and balance of system components. Rather, we procure them from third-party manufacturers and install them in our PV systems as part of our EPC business.

We procure PV modules and other key equipment for project construction from independent suppliers and contract work to third-party EPC contractors in areas such as logistics, installation, construction and supervision. We believe this allows us to focus our resources on higher value-added tasks. We maintain an updated list of qualified and reliable global suppliers and local third-party contractors in the areas where we operate with a proven track record and with which we have established relationships.

We choose our suppliers and third-party EPC contractors through a competitive bidding process. The relevant departments of our headquarters organize and collect bids, communicate with bidders and coordinate with our regional development teams to meet local technical and legal requirements. This helps ensure that we have a strong, reliable and experienced supplier and construction team working with us on each of our EPC project.

Procurement of PV Modules and Other Equipment

We apply stringent quality assurance protocols to select components with a long useful life that are compatible with a variety of parameters of the project, including local topography and local solar irradiation.

PV modules, the primary equipment of our solar projects, typically contribute to a substantial portion of the overall system costs. We procure our PV modules from a wide array of suppliers including Trina Solar Limited, JinkoSolar Holding Co., Ltd., Xiexin Integration Technology Co., Ltd., JA Solar Holding Co., Ltd., LG Electronics, and Chint, among others.

We consider the following factors when we procure project equipment: technical specifications (such as size, type and power output), bid prices, warranty and insurance programs, spectral response, performance in low light, nominal power tolerance levels, degradation rate, technical support and reputation of suppliers. We typically require 10-year warranties for defects in materials or workmanship and 25-year warranty for module capacity under normal testing conditions (2-3% of capacity for the first year with a 0.5-0.8% linear degradation in capacity every year thereafter).

We are generally required to pay 100% of the purchase price within a period ranging from three months to six months after receipt, inspection and acceptance of the PV modules. We typically pay manufacturers deposits that represent 10% to 50% of the total purchase price.

Construction Contracting

When acting as a general contractor, we generally outsource the construction of our PV power plants to third-party construction companies and closely monitor their execution of our designs. Most of these companies are specialized EPC construction subcontractors. Our construction oversight teams conduct constructability reviews, provide construction support, contract administration and document control services, construction inspection, engineering support, instrumentation installation and monitoring, and on-site construction supervision and monitoring.

We utilize a number of metrics to manage and monitor the performance of our third-party contractors in terms of both quality and delivery time and to ensure compliance with applicable safety and other requirements. For instance, we may delegate qualified representatives to review, supervise, organize and provide comments on the third-party contractor's design, construction plan, construction guidelines, materials and documentations. We also conduct periodic inspections to examine project implementation and quality against our project planning and quality standards and prepare periodic reports for review and approval by our relevant departments. If we identify any quality or progress issues that are attributable to the work of our third-party contractors, we will follow-up with them and monitor their rectification work.

Those third-party contractors are responsible for the quality of the project and must maintain relevant insurance designating us as the beneficiary. They must ensure the project complies with all local safety, labor and environmental laws and regulations. We examine and keep records of the production-related safety documentation and insurance policies of our third-party contractors. All production-related tools and equipment used by our third-party contractors must be compliant with and certified by applicable regulatory standards. The contractors submit detailed quality assurance procedures and regularly updates us on the progress, quality and safety of the project. Our third-party contractors utilize a variety of measures to protect the project location, including the transmission line, built facilities and infrastructure, from damage during the construction process.

We are generally entitled to damages if our third-party contractors fail to meet the prescribed requirements and deadlines under our contracts. We usually negotiate to pay our third-party contractors the remaining 5% or 10% of the contract price after the expiration of the quality warranty period, which generally ranges from one to two years. If we pay the full contract price upon completion of a project, we require the contractor to provide a performance guarantee in respect of the warranty obligations for such project.

Commissioning and Warranties

We assess and evaluate our solar projects before completion. Upon completion of construction, we conduct commissioning tests prior to grid connection. The tests include a detailed visual inspection of all significant aspects of the plant, an open circuit voltage test and a short circuit current test, and then a direct-current test after connecting to the grid. We focus commissioning tests on the quality of the construction and major equipment. These tests are conducted in order to ensure that the plant is structurally and electrically safe, and is sufficiently robust to operate as designed for the specified project lifetime.

After grid connection, we also conduct commissioning tests on electricity generation performance. As grid connection requires approval from power companies, post-grid connection commissioning tests are also conducted by local quality supervisors or third-parties approved by the power companies. In addition to the warranties provided by the manufacturers of modules and balance-of-system components, EPC contractors also typically provide a limited warranty against defects in workmanship, engineering design, and installation services under normal use and service conditions for a period of one to two years following the energizing of a section of a solar power plant or upon substantial completion of the entire solar power plant. In resolving claims under the workmanship, design and installation warranties, the new owner has the option of remedying the defect to the warranted level through repair, refurbishment, or replacement.

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. In 2014, we expanded 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 46.676 MW of projects in the U.S., the U.K., Greece, Japan and Italy as of June 29, 2020. We divested all of our business in China in December 2018.

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 25 to 27 years. As of June 29, 2020, our solar project portfolio consisted of:

- **Projects in Operation** — “Projects in operation” refers to projects connected to the grid and selling electricity. As of June 29, 2020, we have projects in operation with an attributable capacity of 16.8 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. We have 19.636 MW of projects under construction in the US as of June 29, 2020 and we expect substantially all of them to be connected to the grid by 2021.
- **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 pipeline in the state of Hawaii, U.S. as of June 29, 2020.

The following summary sets forth our solar projects in operation, solar projects under construction and solar projects in announced pipeline as of June 29, 2020. For more recent development of the solar projects portfolio and potential sale of our solar projects, please see [“Item 5. Operating and Financial Review and Prospects—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	HELIOTIXIO SA	1.082	100%	1.082	Ground	September 2012	EUR0.215/kWh
Greece	HELIOHRISI SA	1.988	100%	1.988	Ground	June 2012	EUR0.215/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	JPY36/kWh
Italy	Italsolar S.r.l.	0.993	100%	0.993	Ground	December 2009	EUR0.325/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
Total		16.8		16.8			

* 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 law 4254/2014. 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. Sinsin was deconsolidated in the year of 2017 due to loss of control.

*Solar Projects Under Construction**

<u>Country</u>	<u>Our equity holding</u>	<u>Number of solar projects</u>	<u>Attributable capacity (MW)</u>	<u>Ground/Rooftop</u>	<u>Scheduled Connection date</u>	<u>FIT terms</u>
US	100%	2	1.996	Ground	2021	<500kW: \$0.238/kWh>500kW: \$0.236/kWh
US	100%	4	12.5	Ground	2021	N/P
US	100%	2	5.14	Ground	2021	N/P
Total		<u>8</u>	<u>19.636</u>			

* Intended by us to be BT projects in 2018 and 2019 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 of December 31, 2019, we had capital commitments of approximately \$5.1 million. As the total capital expenditure 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, the actual total capital expenditure 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 June 29, 2020, 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.;

* 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.

We sold all of our solar projects in China in connection with the sale of our Chinese business in December 2018.

Featured Markets

- **U.S.** We have been present in the U.S. market since the commencement of our business. As of June 29, 2020, we have 19.636MW of projects under construction and 10.24 MW of projects in announced pipeline.
- **U.K.** We entered the U.K. market in 2014. As of June 29, 2020, 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.** We entered the Greek market in 2014. As of June 29, 2020, we own twelve (12) operating solar projects with a total capacity of 33.8 MW, all of which belong to seven (7) different Greek societ e anonymes. Four (4) societ e anonymes, owned by Sinsin which was deconsolidated in 2017, collectively own eight (8)

of the twelve (12) operating solar projects. 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.*** We entered the Japanese market in 2014. As of June 29, 2020, we have 0.2744 MW of solar project in operation. In Japan, all of our projects are eligible to receive FIT.
- ***Italy.*** We entered the Italian market in 2015. As of June 29, 2020, we have 0.993 MW of solar projects in operation. In Italy, all of our projects are eligible to receive FIT.

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

	For the year ended December 31,					
	2017		2018		2019	
	(\$ in thousands except percentage)					
United Kingdom	6,903	5.7%	932	0.7%	979	1.0%
Australia	112,174	92.3%	91,381	72.8%	80,518	82.3%
United States	—	—	18,721	14.9%	4,320	4.4%
Greece	—	—	378	0.3%	1,138	1.2%
Japan	511	0.4%	12,437	9.9%	9,563	9.8%
Italy	1,932	1.6%	1,733	1.4%	1,365	1.4%
Total	121,520	100.0%	125,582	100.0%	97,883	100%

Acquisition of Solar Projects

We made significant acquisitions of solar projects since 2017. See “[Item 5. Operating and Financial Review and Prospects—Operating Results—Recent Acquisition Activities](#)” on the projects we have acquired or expect to acquire. We may keep acquiring completed solar projects or other assets from independent third-parties which we believe will synergize with our existing operations and expansion strategies. Those acquisitions would be preapproved by our board.

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. 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, 2019, 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 attentions 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, 2019. 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. While the exact mix of external and internal financing varies from project to project, we estimate that as of December 31, 2019, approximately 50% to 60% of the total costs of our solar projects under construction were funded by our working capital, with the remainder funded through bank borrowings. 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. For detailed information on our EPC capabilities, see “—Our Engineering, Procurement and Construction Service Business.”

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 Australia Distribution Business

Solar Juice Pty Limited or Solar Juice Australia 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 5000 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 nine 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 SEA Countries. Solar Juice Australia aligns itself with the most popular brands SMA, Fronius, ABB, Solax, LG Electronics, LG Chem, Trina, JA and Chint, 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's needs. Solar Juice Australia's own branded products Opal Panels, Opal Switch and Opal storage provided customers with more value for money choices.

After years' continuous rapid growth, Solar Juice Australia faced a few external and internal challenges including PV market price fluctuation, limited working capital and suppliers' credit in 2018. Solar Juice Australia's management actively undertook an operational restructure to meet market changes, adjusted inventory level to fit working capital, cut operation costs and general expenses to keep profit margin. Solar Juice Australia's inventory and trade payable balances were reduced by 14% and 38% respectively, borrowings

decreased 17% after a replacement of previous trade finance with new debt finance from December 31, 2018 to December 31, 2019. As a result, Solar Juice Australia successfully improved its operational efficiency and cost-effectiveness, achieved \$0.55 million net profit target, with a stronger financial position by the end of 2019.

Solar Juice Australia will 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 supports and warranty services will keep differentiating it from the competitors.

In May 2020, Solar Juice Co. Ltd ("Solar Juice Co"), a wholly owned subsidiary of the Company, in its capacity as shareholder of Solar Juice Australia (an Australian company) together with Mr. Kun Fong Lee and Mr. Jinhan Zhou (who hold shares in Solar Juice Australia as trustee for Solar Juice Co) ("SPI Shareholders") commenced proceedings in the Federal Court of Australia as plaintiffs against its other shareholders and some of its other directors and purported directors and against Solar Juice Australia ("Defendants") in relation to a purported new rights issue undertaken by Solar Juice Australia, the purported removal by those other shareholders of Mr. Lee and Mr. Zhou as directors of Solar Juice Australia and the purported appointment of an additional director. The SPI Shareholders allege that the purported new rights issue and the subsequent purported removal and appointment of directors are invalid and ineffective and therefore should be set aside. If effective, the purported rights issue will result in the SPI Shareholders' shareholding in Solar Juice Australia being reduced from 80% to 40%. ***If our lawsuit is not successful, we will not control Solar Juice Australia or be able to consolidate its financial results in our financial statements and our financial results and stock price will be materially adversely affected.*** Solar Juice currently accounts for 82.3% of our revenues and 15.7% of our total assets.

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, Loop 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.

Cryptocurrency Hosting Services

Cryptocurrencies and cryptocurrency mining are new industries, the competitive landscapes are still developing. Although the barriers to entry in this market are low, most of the large cryptocurrency mining farms such as HIVE Blockchain, Hut8Mining, NVIDIA, Bitfury Mines, Bcause LLC and Bitmain, cater to large investors.

However, cryptocurrency mining still requires large amounts of energy to sustain. Our competitive advantage as a green energy producing company in this industry would be being able to offset the high electrical bills required in the mining process by providing energy from our own energy grids and solar farms.

Hemp and CBD Business

Hemp and CBD are also relatively new industries that sprung up due to the legalization of recreational marijuana in many states across the United States. Being one of the first energy companies to venture into this industry, our competitive advantage in this area is being able to supplement energy needs of CBD and Hemp production from our own energy grids or solar farms. This will offset a significant portion of the costs required for production that can potentially help us to price more competitively against other companies in the industry. However, the CBD and Hemp industry is still in its early stages of development. The demand of these products have not solidified and the growth of the industry is not as strong as its recreational marijuana counterpart.

Business of Alfalfa and Other Related Agriculture Products

Our in-depth research into this market has shown that there is a growing demand for Alfalfa grass, especially in Eastern countries like China. Alfalfa grass is commonly used as stock feed for farmed animals like cows. Our history of operations in China has helped us to gain partners and grow a solid customer base over the years. Our knowledge of the Chinese market will also prove to be valuable in this venture.

Suppliers

There are numerous suppliers of PV modules in the solar power industry, and we have adopted a supplier-neutral approach. For both our EPC service business and 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 both our EPC service and global project development business, we procure our PV modules from a broad range of suppliers including Trina Solar Limited, JinkoSolar Holding Co., Ltd., Xiexin Integration Technology Co., Ltd., JA Solar Holding Co., Ltd., LG Electronics, and Chint, among others.

Our major suppliers of our alfalfa business and CBD and hemp is the local growers near our hay processing facilities in the state of Arizona and also CBD & hemp processing facility in the state of California.

Customers and Marketing

We have historically provided EPC and O&M services, a line of business we are still engaged in. We are also selling electricity to the grid under our IPP model as well as selling solar projects under our BT model. Customers of our EPC services include independent power developers and producers as well as commercial and industrial companies.

For our global project development 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. 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. 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.

From the year 2018 to 2019, there is a slightly decrease in the proportion of revenue from sales of PV solar systems, the figures for sales of PV solar components also saw a slight downwards trend.

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 14 years, we have built our brand awareness and lately we have not engaged in marketing activities.

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.

Likewise to hemp and CBD business, demand and our operating results for hemp and CBD products fluctuate from period to period based on the seasonality of industry demand for solar power products.

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.

C. Organizational Structure

The following table sets out our principal subsidiaries as of December 31, 2019:

Subsidiaries	Place of Incorporation	Percentage of ownership
Solar Juice (HK) Limited	Hong Kong	100%
SPI Group Holding Co., Ltd.	Hong Kong	100%
SP Orange Power (HK) Limited	Hong Kong	100%
SPI Investment Holding Limited	British Virgin Islands	100%
SolarJuice Co., Ltd.	Cayman	100%
SPI Orange Co., Ltd.	Cayman	100%
Knight AG Holding Co., Ltd.	Cayman	100%
Knight Holding Corporation	U.S.	100%
Knight AG Sourcing Inc.	U.S.	100%
CBD and Hemp Group Co.,Ltd.	U.S.	100%
1215542 B.C. LTD.	Canada	100%
SPI Solar, Inc.	U.S.	100%
SPI Orange Power (HK) Limited	Hong Kong	100%
SPI Renewable Energy (Luxembourg) Private Limited Company S.a.r.l. ⁽¹⁾	Luxembourg	100%
Italsolar S.r.l.	Italy	100%
Heliostixio S.A.	Greece	100%
Helioxrisi S.A.	Greece	100%
THERMI SUN S.A.	Greece	100%
Solar Juice (MY) SdnBhd	Malaysia	100%
Solar Juice (SG) Pte Ltd	Singapore	100%
Solar Juice Holding Pte Ltd.	Singapore	100%
Calwail Power Holding, LLC	U.S.	100%
Solar Juice USA Inc.	U.S.	100%
Solar Juice Pty Limited	Australia	80%
SPI Solar Japan G.K. ⁽²⁾	Japan	97%
Solar Power Inc. UK Services Limited	U.K.	100%
Emotion Energy Solar One Limited	U.K.	100%
Cairnhill Solar field Limited	U.K.	100%
SP Orange Power (Cyprus) Limited	Cyprus	100%
Manchester Solar, LLC	US	100%
Belvedere Solar LLC	US	100%
Dover Solar LLC	US	100%
Waterford Solar LLC	US	100%
Clayfield Solar LLC	US	100%

Notes:

- (1) SPI Renewable Energy (Luxembourg) Private Limited Company S.a.r.l. holds two solar power project entities in Italy and one entity in Germany.
- (2) SPI Solar Japan G.K. holds one solar power project entities in Japan.

D. Property, Plant and Equipment

Our global corporate headquarters are located in Hong Kong SAR, China, which is under a one-year lease that expires on May 3, 2021. We occupy approximately 3,332 square feet of office space in Santa Clara, California, for legal and business development, under a lease that expires in June 30, 2021. We occupy approximately 10.5 acre industrial property in Orange Cove, California, under a lease that expires in December 31 2049, and be granted an option to purchase the property. We owned approximately 120 acre land in Arizona, US. We occupy approximately 114 square meters of office space in Athens, the headquarters of the four Greek SPVs, under a monthly lease that expires on June 30, 2020. We occupy approximately 80 square feet of office space in London for operations and business development under a lease which renews every six months. We lease approximately 2,155 square meters of office space and warehouse space in Wetherill Park, Sydney, which expires on July 31, 2021.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

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 20-F. 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 3. Key Information—D. Risk Factors” or in other parts of this annual report on Form 20-F.

A. Operating Results

We are a global provider of photovoltaic (PV) 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. Since 2018, we have engaged in the sale of bitcoin mining equipment, providing hosting services to mine bitcoins. In 2019, we began selling hay from the United States to China.

Our liquidity position has deteriorated since 2015. We suffered losses of \$91.0 million, \$12.3 million and \$15.1 million for the years ended December 31, 2017, 2018 and 2019, respectively. We also had an accumulated deficit of \$585.4 million and a working capital deficit of \$113.5 million as of December 31, 2019. For a detailed discussion, please see “[Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Capital Resources and Material Known Facts on Liquidity.](#)”

These may raise substantial doubt about our ability to continue as a going concern. We have developed a liquidity plan, including cost saving measures and improvements in working capital management. We believe this liquidity plan, if executed successfully, will provide sufficient liquidity to meet our obligations for a reasonable period of time. However, we cannot assure you that this liquidity plan will be successfully executed.

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 pandemic of a novel coronavirus (COVID-19) has resulted in a widespread health crisis that has adversely affected the economies and financial markets worldwide. Government efforts to contain the spread of the coronavirus through lockdowns of cities, business closures, restrictions on travel and emergency quarantines, among others, and responses by businesses and individuals to reduce the risk of exposure to infection, including reduced travel, cancellation of meetings and events, and implementation of work-at-home policies, among others, have caused significant disruptions to the global economy and normal business operations across a growing list of sectors and countries.

Our operating results substantially depend on revenues derived from sales of PV project assets, provision of electricity and our Australian subsidiary's trading of PV components. As the COVID-19 spread continues, the measures implemented to curb the spread of the virus have resulted in supply chain disruptions, insufficient work force and suspended manufacturing and construction works for solar industry. One or more of our customers, partners, service providers or suppliers may experience financial distress, delayed or defaults on payment, file for bankruptcy protection, sharp diminishing of business, or suffer disruptions in their business due to the outbreak. These preventative measures have also impacted our daily operations. The efforts enacted to control COVID-19 have placed heavy pressure on our marketing and sales activities. Moreover, due to the decrease in prices of crude oil, the demand for solar energy can decrease in the near future. We continue to assess the related risks and impacts COVID-19 pandemic may have on our business and our financial performance. In light of the rapidly changing situation across different countries and regions, it remains difficult to estimate the duration and magnitude of COVID-19 impact. Until such time as the COVID-19 pandemic is contained or eradicated and global business return to more customary levels, our business and financial results may be materially adversely affected.

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 EPC service providers and solar project developers like us with significant opportunities to grow our business.

Many markets in the PV industry continue to be affected by government subsidies and economic incentives. A number of countries have introduced highly favorable FIT price support regimes. For example, Japan, which has a high demand for power and low domestic fossil fuel reserves, faces relatively high energy costs. As a result, the Japanese government has introduced an attractive FIT price support regime to encourage the development of solar parks. In 2016, the United Kingdom reduced its FIT for all technologies by 65% at the national level. In Asia, several countries reduced their FIT rates. For example, Japan reduced its solar FIT by 12.5% for 2017 and aims for cuts of 10% or more in the next two years. While governments generally ratchet down PV subsidies over time to reflect anticipated declines in the system costs of solar parks, the ratchet down schedules often underestimate our actual realized decrease in costs thus their effect on our margins is manageable. To foster our growth, we have shifted our focus away from countries with less favorable subsidy regimes and towards countries with more favorable subsidy regimes.

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.

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, FIT, 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. Reductions in FIT programs may result in a significant fall in the price of and demand for solar power related products. Our revenue and operating results may be adversely impacted by unfavorable policy revisions, such as reductions FIT in the United States, our largest market, and certain major markets for our PV solutions. 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.

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, 2017, 2018 and 2019 was mainly derived from sales of PV project assets, sales of pre-development solar project, and sales of PV components.

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

	For the year ended December 31,					
	2017		2018		2019	
	(\$ in thousands except percentage)					
Sales of PV components	111,795	92.0%	93,547	74.5%	80,941	82.7%
Sales of PV project assets	6,042	5.0%	10,809	8.6%	9,563	9.8%
Electricity revenue with PPAs	2,793	2.3%	3,043	2.4%	3,368	3.4%
Sales of pre-development solar project	—	—%	15,794	12.6%	(2,835)	(2.9)%
Bitcoin mining related business	—	—%	1,052	0.8%	4,197	4.3%
Sales of hays and others	890	0.7%	1,337	1.1%	1,162	1.2%
Total	<u>121,520</u>	<u>100.0%</u>	<u>125,582</u>	<u>100.0%</u>	<u>97,883</u>	<u>100.0%</u>

Cost of Goods Sold

Our cost of goods sold consist primarily of raw materials and labor cost. In the years ended December 31, 2017, 2018 and 2019, we had cost of goods sold of \$111.4 million, \$114.5 million and \$90.7 million from our continuing operation, respectively.

Operating Expenses

In the years ended December 31, 2017, 2018 and 2019, our operating expenses consisted of (1) general and administrative expenses, (2) sales, marketing and customer service expenses, (3) impairment charges and (4) provision (reverse) for doubtful accounts, notes and other receivables.

General and administrative expenses. Our general and administrative expenses consist primarily of salaries and share based compensation expense, professional service fees, rental and office supplies expenses. In the years ended December 31, 2017, 2018 and 2019, our general and administrative expenses from our continuing operations were \$14.0 million, \$12.2 million and \$15.2 million, respectively.

Sales, marketing and customer service expenses. Our sales, marketing and customer service expenses consist primarily of advertising expense, business development expense and salaries. In the years ended December 31, 2017, 2018 and 2019, our sales, marketing and customer service expenses from continuing operation were \$2.9 million, \$2.3 million and \$2.4 million, respectively.

Impairment charges. Our impairment charges consist of impairment charges for project assets, goodwill and intangible assets, property, plant and equipment and etc. In the years ended December 31, 2017, 2018 and 2019, our impairment charges from our continuing operations were \$0.7 million, \$nil and \$4.7 million, respectively.

Provision (reverse) for doubtful accounts, notes and other receivables. In the year ended December 31, 2017, our provision for doubtful accounts and notes from continuing operations were \$1.7 million. In the year ended December 31, 2018, we reversed the provision of \$0.5 million. In the year ended December 31, 2019 our provision for doubtful accounts were of \$4.1 million.

Other Income (Expense)

In the years ended December 31, 2017, 2018 and 2019, our other income (expense) includes interest expense, interest income, gain on extinguishment of convertible bonds, change in fair value of derivative liability, loss on investment in affiliates, reversal (accrual) of tax penalty, gain on trouble debt restructuring, net foreign exchange gain and others.

Interest expense. Our interest expense arises from borrowings. In the years ended December 31, 2017, 2018 and 2019, our interest expense from continuing operations was \$8.1 million, \$6.7 million and \$3.9 million, respectively.

Interest income. Our interest income arises from cash deposited in banks. In the years ended December 31, 2017, 2018 and 2019, our interest income from continuing operations was \$0.4 million, \$0.3 million and \$0.2 million, respectively.

Gain on extinguishment of convertible bonds. We recorded a gain on extinguishment of convertible bonds of \$7.1 million from continuing operations in the year ended December 31, 2017, due to the extension of a convertible bond agreement that we entered into with Union Sky Holdings Group Limited (“Union Sky”).

Tax penalty. We recorded a \$9.7 million expected tax penalty in the year ended December 31, 2017 for late filing of Federal and State income tax returns from continuing operations for the tax year ended December 31, 2016. On May 27, 2019 and February 20, 2020, the Internal Revenue Service (IRS) issued notices which assessed penalties for Federal income tax for the tax years ended December 31, 2017 and 2016 in the amount of \$1.2 million and \$1.3 million plus an immaterial amount of interest, respectively. The state portion of tax penalty is re-estimated in the amount of \$0.3 million. Thus, we reversed \$6.9 million of tax penalty for the year ended December 31, 2019.

Gain on trouble debt restructuring. We recorded a gain of \$1.9 million on trouble debt restructuring from continuing operations for the year ended December 31, 2018. We defaulted the first amendment agreement with Union Sky Holding Group Limited (“Union Sky”). On June 29, 2018, we entered into another amendment agreement with the Union Sky and Magical Glaze Limited (“MGL”) to further extend the payment term. A gain was recognized for the difference between the future undiscounted cash flow of the second amended convertible bond of \$20.0 million and the carrying amount of the first amended convertible bond of \$21.9 million as of June 29, 2018.

Loss on investment in affiliates. We recorded a loss on investment in affiliates of \$2.2 million which mainly arose from further impairment on our investment in ENS in the year ended December 31, 2017.

Income Tax

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

	For the year ended December 31,		
	2017	2018	2019
	(\$ in thousands)		
United States	\$ (24,757)	\$ (6,946)	\$ (4,926)
Foreign	(1,620)	(1,141)	(10,130)
Total	<u>\$ (26,377)</u>	<u>\$ (5,805)</u>	<u>\$ (15,056)</u>

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

We and our subsidiaries organized in the United States are subject to U.S. federal income tax at a rate of up to 35% for the year ended December 31, 2017.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (“TCJA” or the “Act”) (which is commonly referred to as “U.S. tax reform”). Among other provisions, the Act reduces the top U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, changes the rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017, and creates new taxes on certain foreign sourced earnings. The Company reflected the changes resulting from the Act in the financial statements for the period of enactment, the year ended December 31, 2017. The change in corporate rate resulted in a \$22.8 million decrease in the Company’s gross deferred tax assets, with an offsetting decrease in valuation allowance of the same amount. The Company was not subject to a one-time repatriation tax as no aggregate foreign accumulated earnings and profits existed in the foreign subsidiaries as of December 31, 2018 and 2017. The Company will account for future tax liability arising from Global Intangible Low-Taxed Income, if any, as a period cost. The Company has accounted for additional tax liability in 2018 arising from Global Intangible Low-Taxed Income of \$0.9 million which accounted for as a period cost. In accordance with Staff Accounting Bulletin No. 118, the Company determined that the measurement of deferred tax assets and liabilities, as noted above, was accurate and no other adjustments relating to the Act were necessary. The Company has recognized no income on account of GILTI as no aggregate foreign earnings existed in the foreign subsidiaries for 2019.

Hong Kong

Our subsidiaries incorporated in Hong Kong were subject to the uniform tax rate of 8.25% for the years ended December 31, 2018 and 2019, respectively. They 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. 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, 2017, 2018 and 2019.

See [“Item 10. Additional Information—E. Taxation” for more information.](#)

Critical Accounting Policies and Estimates

Principles of Consolidation

The consolidated financial statements include the financial statements of our Company, our subsidiaries, and consolidated VIEs. All material inter-company transactions and balances have been eliminated upon consolidation. For consolidated subsidiaries where our ownership in the subsidiary is less than 100%, the equity interest not held by us is shown as noncontrolling interests. We account for investments over which it has significant influence but not a controlling financial interest using the equity method of accounting. We deconsolidate a subsidiary when we cease 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.

Revenue Recognition

On January 1, 2018, we adopted Accounting Standards Codification (“ASC”) No. 606, “Revenue from Contracts with Customers” (“ASC 606” or “Topic 606”) and applied the modified retrospective method to all contracts that were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Group’s historical accounting practices under ASC Topic 605 “Revenue Recognition”.

We have determined that the impact of the transition to the new standard is immaterial to our revenue recognition model. Accordingly, we have not made any adjustment to opening retained earnings.

Our accounting practices under ASC Topic 606 are as followings:

The Company generates revenue from sales of PV components, electricity revenue with power purchase agreements (“Electricity revenue with PPAs”), sales of PV project assets, bitcoin mining equipment sales and hosting service, sales of pre-development solar projects, revenue from bitcoin mining and sales of hays.

Sale of PV components. Revenue on sale of PV components 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.

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.

Bitcoin mining equipment sales and hosting service. Revenue on sale of bitcoin mining equipment is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon delivery of the products to the hosting site or receipt place assigned by the customer, installation and setting up the products. Revenue for hosting service is recognized over time as services are performed and based on the output method related to the time incurred during the service period.

Sales of pre-development solar projects. For sales of pre-development solar projects in which we transfer 100% of the membership interest in solar projects to a customer, we recognize all of the revenue for the consideration received at a point in time when the membership interest was transferred to the customer, which typically occurs when we delivered the membership interest assignment agreement to the customer.

The contract arrangements may contain provisions that can either increase or decrease the transaction price. These variable amounts generally are resolved upon achievement of certain performance or upon occurrence of certain price reduction conditions. Variable consideration is estimated at each measurement date at its most likely amount to the extent that it is probable that a significant reversal of cumulative revenue recognized will not occur and true-ups are applied prospectively as such estimates change.

Changes in estimates for sales of pre-development solar projects occur for a variety of reasons, including but not limited to (i) EPC construction plan accelerations or delays, (ii) product cost forecast changes, (iii) change orders, or (iv) occurrence of purchase price reduction conditions. The cumulative effect of revisions to transaction prices are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated.

Revenue from bitcoin mining. We entered into a digital asset mining pool to provide computing power to the mining pool. Providing computing power in crypto asset transaction verification services is an output of our ordinary activities. The provision of computing power is the only performance obligation in the contracts with mining pool. The transaction consideration we receive, if any, is noncash consideration, which we measure at fair value on the date received, which is not materially different than the fair value at contract inception. The consideration is all variable. Because it is not probable that a significant reversal of cumulative revenue will not occur, the consideration is constrained until we receive the consideration, at which time revenue is recognized. There is no significant financing component in these transactions.

Fair value of the digital asset award received is determined using the average U.S. dollar spot rate of the related digital currency at the time of receipt.

Sale of Alfalfa hay. Revenue on sale of alfalfa hay is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon the acceptance of the products made by the customer.

Product Warranties

We offer the industry standard warranty up to 25 years for PV modules and industry standard warranty for five to ten years on inverter and balance of system components. Due to the warranty period, we bear the risk of extensive warranty claims long after products have been shipped and revenues have been recognized. We provide a limited warranty to the original purchasers of its solar modules, inverters and cables for trading business for one to five years, in relation to defects in materials and workmanship. For our cable, wire and mechanical assemblies business, historically the related warranty claims have not been material. For our solar PV business, the greatest warranty exposure is in the form of product replacement.

During the quarter ended September 30, 2007 and continuing through the fourth quarter of 2010, we installed own manufactured solar panels and accrued warranty based on our own historical data. Since 2011, due to the absence of historical material warranty claims and identical warranty terms, we have not recorded any additional warranty provision relating to solar energy systems sold. PV construction contracts entered into during the recent years included provisions under which we agreed to provide warranties to the customers. The warranty we offer to its customers is identical to the warranty offered to us by its suppliers, therefore, we pass on all potential warranty exposure and claims, if any, with respect systems sold by us to our suppliers.

Impairment of Long-lived Assets

Our long-lived assets include property, plant and equipment, project 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 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 operations would be recognized.

Inventories

Inventories are carried at the lower of cost or net realizable value, determined by the weighted average cost method. Provisions are made for obsolete or slow-moving inventories based on management estimates. Inventories are written down based on the difference between the cost of inventories and the net realizable value based upon estimates about future demand from customers, specific customer requirements on certain projects and other factors. Inventory provision charges establish a new cost basis for inventory that subsequently cannot be marked up based on changes in underlying facts and circumstances.

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 issued. 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, which is generally the vesting period.

Accounts Receivables and Allowance for Doubtful Accounts

We grant open credit terms to credit-worthy customers. Accounts receivable are primarily related to our sales of pre-development solar project contracts and sales of PV components. For sales of pre-development solar projects, the payment is typically due in installments over the contract term, which are both before and after the performance by the

Company. Payment for sales of PV components and electricity revenue with PPAs are typically due in full within 30 to 90 days of shipping of the products or the start of the contract term.

We maintain allowances for doubtful accounts. We regularly monitor and assess the risk of not collecting amounts owed by customers. This evaluation is based upon a variety of factors, including an analysis of amounts current and past due along with relevant history and facts particular to the customer. We do not have any off-balance-sheet credit exposure related to its customers. Contractually, we may charge interest for extended payment terms and require collateral.

Project Assets

We acquire or construct PV solar power systems (“solar system”) that are (i) held for development and sale or (ii) held for our own use to generate income or return from the use of the solar system. Solar systems are classified as either held for development and sale within “project assets” or as held for use within “property, plant and equipment” based on our intended use of solar systems. We determine 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 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 project assets 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 operating income in the consolidated statement of operations. The solar systems held for use are used by us 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 sales in the consolidated statement of operations. The costs to construct solar system intended to be held for own use are capitalized and reported within property, plant 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 system 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 system classified as held for own use is reported in other operating income or expense 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, we initiate 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 assets and it is probable that the project assets will be sold within one year. Otherwise, the project assets held for development and sale 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”, we consider a project commercially viable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed. We also consider 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. We consider 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. We record 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.

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 carry forwards. 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 Company 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. 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 uncertainty tax position was recorded by us for the years ended December 31, 2019, 2018 and 2017. We do not expect that the assessment regarding unrecognized tax positions will materially change over the next 12 months. The Company is not currently under examination by an income tax authority, nor has been notified that an examination is contemplated.

Recent Accounting Pronouncements

Recently Adopted Accounting Standards

In May 2014, the Financial Accounting Standards Board (FASB) issued Topic 606, which supersedes the revenue recognition requirements in Topic 605. The Group adopted Topic 606 as of January 1, 2018 using the modified retrospective transition method applied to those contracts which were not completed as of January 1, 2018.

In February 2016, the FASB issued ASU 2016-12, Leases (ASC Topic 842), which amends the leases requirements in ASC Topic 840, Leases. The Group adopted ASC Topic 842 using the modified retrospective transition method effective January 1, 2019. There was no cumulative effect of initially applying ASC Topic 842 that required an adjustment to the opening retained earnings on the adoption date nor revision of the balances in comparative periods.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): “Restricted Cash” (“ASU 2016-18”). ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. This update is effective in fiscal years, including interim periods, beginning after December 15, 2017 and early adoption is permitted. The adoption of this guidance will result in the inclusion of the restricted cash balances within the overall cash balance and removal of the changes in restricted cash activity, as a result, the Company no longer presents transfers between cash and cash equivalents and restricted cash in the statement of cash flows. Furthermore, an additional reconciliation will be required to reconcile cash, cash equivalents, and restricted cash reported within the Consolidated Balance Sheets to sum to the total shown in the Consolidated Statement of Cash Flows. The Group has already disclosed the restricted cash separately on its Consolidated Balance Sheets. Beginning January 1, 2018, the Group has adopted and included the restricted cash balances on the Consolidated Statement of Cash Flows and reconciliation of cash, cash equivalent, and restricted cash within its Consolidated Statements of Balance Sheet and Consolidated Statement of Cash Flows. This guidance has been applied retrospectively to the Consolidated Statement of Cash Flows for the year ended December 31, 2017, which required the Company to recast each prior reporting period presented.

In January 2017, the FASB issued Accounting Standards Update (“ASU”) 2017-01, “Business Combination (Topic 805): Clarifying the Definition of a Business”. The Company adopted ASU 2017-01 on January 1, 2018 and applied the new definition of a business prospectively for acquisitions made subsequent to December 31, 2017. Upon the adoption of ASU 2017-01, a new screen test is introduced to evaluate 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.

Accounting Pronouncements Issued But Not Yet Adopted

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820)-Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement. ASU 2018-13 removes the amounts and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy and the valuation processes for Level 3 fair value measurements; modifies certain disclosure requirements in Topic 820; and require additional disclosures such as the range and weighted average of significant unobservable inputs used to develop Level 3 measurements etc. ASU No. 2018-13 is effective for the Company beginning in the first quarter of fiscal year 2020. We do not expect this guidance will have a material impact on its consolidated financial statements.

On December 18, 2019, the FASB issued ASU No. 2019-12, Income taxes (Topic 740), Simplifying the Accounting for Income Taxes. This guidance amends ASC Topic 740 and addresses several aspects including 1) evaluation of step-up tax basis of goodwill when there is not a business combination, 2) policy election to not allocate consolidated taxes on a separate entity basis to entities not subject to income tax, 3) accounting for tax law changes or rates during interim periods, 4) ownership changes from equity method investment to subsidiary or vice versa, 5) elimination of exception to intraperiod allocation when there is gain in discontinued operations and a loss from continuing operations, 6) treatment of franchise taxes that are partially based on income. The guidance is effective for calendar year-end public entities on January 1, 2021 and other entities on January 1, 2022. We are evaluating the impact of this guidance on its consolidated financial statements.

We do not believe other recently issued but not yet effective accounting standards, if currently adopted, would have a material effect on the consolidated financial position, statements of operations and cash flows.

Recent Acquisition Activities

When making solar project acquisitions, we focus on attractive targets based on our assessment of the rate of return, taking into consideration a target project's irradiation hours, applicable FIT rate, key technical components used as well as our cost of financing for the acquisition. See ["Item 4. Information on the Company—B. Business Overview—Our Global Project Development Business—Acquisition of Solar Projects" for more information on the criteria we apply when making project acquisitions.](#)

When we pursue a target engaged in a solar business, such as a distribution business or a rooftop EPC business, we primarily select targets with higher gross profit margins, or in the case of a target engaged in a line of business complementary to our existing operations, with high potentials for us to realize synergies.

The following summary outlines the major acquisitions we completed, or for which have entered into definitive agreements since 2017:

Solar Projects

In March 2017, our wholly owned subsidiary, SPI Solar Japan GK entered into a definitive agreement to sell all of its interest in the land and project development rights in its two solar PV projects with total capacity of 4.4 MW in Shibayama city, Chiba. SPI Japan will also provide engineering, procurement and construction service to complete the projects. The solar plants are located approximately 50 kilometres east of Tokyo in Chiba and each with capacity of 2.2 MW and with an estimated total capacity of 5,200,000 kWh annually.

In May 2017, we entered into an agreement to sell all of our interest in Todderstaffe Solar Limited, one of the solar PV system in UK, to Capital Stage AG. The Todderstaffe project has a capacity of 4.4MW.

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 HELIOSTIXIO S.A., from THERMI TANE Venture Capital Fund ("TTVCF"), for a total consideration of EUR €12.88 million, subject to certain adjustments. The transaction is subject to customary closing conditions. These three companies own a total of four PV plants with 7.4MWp PV installations in northern Greece. The closing of the transaction will take place in three separate stages (one for each company under acquisition). The acquisition of HELIOSTIXIO 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 Company has completed its last of the 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 in November 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 USA (9.653 MW) to third parties.

In December 2018, SPI Energy Co., Ltd divested our solar projects in China.

In July 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 1.89MW. The Company has now closed 6 of the 8 projects within the Oregon Portfolio.

In October, 2019, the Company completed the closing on the sale of Sun Roof II and Sun Roof V totaling 2.83MW to Theia Investments (Italy) S.r.l (“Theia”). Theia paid approximately EUR 4.3 million to complete the transaction.

In March, 2020, the Company completed the closing of the sale of its Sun Roof I assets, a 479 kWp rooftop solar project in Italy. Proceeds from the sale were approximately EUR 1.1 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.

We have funded our acquisitions primarily from cash generated from our financing activities and from credit facilities. Going forward we expect to fund our future acquisitions with cash generated from our operations, as well as equity and debt financing.

Results of Operations

The following table sets forth a summary, for the periods indicated, of our consolidated results of operations from our continuing 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.

	For the year ended December 31,					
	2017		2018		2019	
	(\$ in thousands except percentage)					
Net sales:						
Net sales	121,520	100.0 %	125,582	100.0%	97,883	100 %
Cost of goods sold:						
Cost of goods sold	111,428	91.7 %	114,525	91.2%	90,693	92.7 %
Total cost of goods sold	111,428	91.7 %	114,525	91.2%	90,693	92.7 %
Gross profit	10,092	8.3 %	11,057	8.8%	7,190	7.3 %
Operating expenses:						
General and administrative	13,994	11.5 %	12,225	9.8%	15,158	15.5 %
Sales, marketing and customer service	2,944	2.4 %	2,285	1.8%	2,398	2.4 %
Provision (reverse) for doubtful accounts, notes and other receivables	1,693	1.4 %	(501)	(0.4)%	4,115	4.2 %
Impairment charges	740	0.6 %	—	—%	4,690	4.8 %
Total operating expenses	19,371	15.9 %	14,009	11.2%	26,361	26.9 %
Operating loss	(9,279)	(7.6)%	(2,952)	(2.4)%	(19,171)	(19.6)%
Other income (expense):						
Interest expense	(8,087)	(6.7)%	(6,665)	(5.3)%	(3,923)	(4.0)%
Interest income	384	0.3 %	320	0.3%	155	0.2 %
Gain on extinguishment of convertible bonds	7,121	5.9 %	—	—	—	—
Change in fair value of derivative liability	—	— %	—	—	285	0.3 %
Loss on investment in affiliates	(2,214)	(1.8)%	—	—%	—	— %
Net foreign exchange gain (loss)	(5,141)	(4.2)%	1,118	0.9%	1,261	1.3 %
Reversal (accrual) of tax penalty	(9,670)	(8.0)%	—	—%	6,890	7.0 %
Gain on troubled debt restructuring	—	— %	1,887	1.5%	—	— %

Others	509	0.4 %	487	0.4%	(553)	(0.6)%
Total other expense, net	(17,098)	(14.1)%	(2,853)	(2.2)%	4,115	4.2 %
Loss before income taxes	(26,377)	(21.7)%	(5,805)	(4.6)%	(15,056)	(15.4)%
Income taxes expense	137	0.1 %	332	0.3%	92	0.1 %
Net loss	(26,514)	(21.8)%	(6,137)	(4.9)%	(15,148)	(15.5)%

Comparison of the year ended December 31, 2019 to the year ended December 31, 2018

Net sales —Net sales were \$125.6 million and \$97.9 million for the years ended December 31, 2018 and 2019, respectively, representing a decrease of \$27.7 million or 22%. The decrease in net sales for the year ended December 31, 2019 over the comparative period was primarily due to the decrease of sales of PV solar components by \$12.6 million and sales of pre-development project by \$18.6 million respectively, which was partially offset by the increase of bitcoin and hay sales.

Cost of goods sold —Cost of goods sold was \$114.5 million (91.2% of net sales) and \$90.7 million (92.7% of net sales) for the years ended December 31, 2018 and 2019, respectively, representing a decrease of \$23.8 million or 21%. The decrease in cost of goods sold was consistent with the decrease of sales.

Gross profit —Our gross profit decreased from \$11.1 million in the year ended December 31, 2018 to \$7.2 million in the year ended December 31, 2019. Gross margins were 8.8% and 7.3% for the years ended December 31, 2018 and 2019, respectively. The decrease in gross margin was primarily due to the reversal of sales of pre-development projects amounting to \$ 2.8 million.

General and administrative expenses —General and administrative expenses were \$12.2 million (9.8% of net sales) and \$15.2 million (15.5% of net sales) for the years ended December 31, 2018 and 2019, respectively, representing an increase of \$2.9 million, or 24%. The increase in our general and administrative expenses was mainly due to the increase of salary and welfare and professional service fee, which was partially offset by share-based compensation gain.

Sales, marketing and customer service expenses —Sales, marketing and customer service expenses were \$2.3 million (1.8% of net sales) and \$2.4 million (2.4% of net sales) for the years ended December 31, 2018 and 2019, respectively, representing an increase of \$0.1 million, or 5%. Sales, marketing and customer service expenses kept stable during the two years.

Provision (reverse) for doubtful accounts, notes and other receivables —In 2018, we reversed doubtful accounts provision of \$0.5 million. In 2019, we accrued doubtful accounts provision of \$4.1 million.

Impairment charges —No impairment charge was recorded for the year ended December 31, 2018 and we accrued \$4.7 million impairment loss for the year ended December 31, 2019. The increase was due to decrease in the market value of mining equipment and impairment in PV stations

Interest expense —Interest expense was \$6.7 million (5.3% of net sales) and \$3.9 million (4.0% of net sales) for the years ended December 31, 2018 and 2019, respectively, representing a decrease of \$2.8 million, or 41%. The decrease in interest expense was due to the decrease of convertible bond interest.

Interest income —Interest income was \$0.3 million (0.3% of net sales) and \$0.2 million (0.2% of net sales) for the years ended December 31, 2018 and 2019, respectively.

Gain on trouble debt restructuring—We recorded a gain of \$1.9 million on troubled debt restructuring for the year ended December 31, 2018. We defaulted the first amendment agreement with Union Sky in 2018. On June 29, 2018, we entered into another amendment agreement with the Union Sky and Magical Glaze Limited (“MGL”), a company affiliated with Union Sky, to further extend the payment term. A gain is recognized for the difference between the future undiscounted cash flow of the second amended convertible bond of \$20.0 million and the carrying amount of the first amended convertible bond of \$21.9 million as of June 29, 2018.

Other gains or expenses—We generated other gain of \$1.6 million and \$1.0 million in the year ended December 31, 2018 and 2019.

Income tax expense —We had a provision for income taxes of \$0.3 million (0.2% of net sales) and \$0.1 million (0.1% of net sales) for the years ended December 31, 2018 and 2019, respectively.

Net loss —For the foregoing reasons, we incurred a net loss of \$15.1 million (15.5% of net sales) for the year ended December 31, 2019, representing an increase of loss compared to a net loss of \$6.1 million (4.9% of net sales) from our continuing operations for the year ended December 31, 2018.

A comparison for operating results of the year ended December 31, 2018 to the year ended December 31, 2017 has been omitted from this annual report. For the details about the comparison, please see “[Item 5. Operating and Financial Review and Prospects – A. Operating Results – Results of Operations](#).” Included in the Company’s annual report on Form 20-F for the year ended December 31, 2018 filed with the SEC on April 30, 2019.

B. Liquidity and Capital Resources

Liquidity

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

	For the year ended December 31,		
	2017	2018	2019
	(\$ in thousands)		
Net cash provided by (used in) operating activities, continuing operations	\$ (14,373)	\$ 7,851	\$ (2,871)
Net cash generated by operating activities, discontinued operations	2,733	159	–
Net cash used in investing activities, continuing operations	(2,934)	(3,346)	(7,894)
Net cash used in investing activities, discontinued operations	(352)	(418)	–
Net cash generated from (used in) financing activities, continuing operations	8,284	(1,585)	9,520
Net cash used in financing activities, discontinued operations	(2,488)	(2,145)	–
Effect of exchange rate changes on cash	(477)	453	(351)
Net increase (decrease) in cash and cash equivalents	<u>\$ (9,607)</u>	<u>\$ 969</u>	<u>\$ (1,596)</u>

As of December 31, 2017, 2018 and 2019, we had \$2.3 million, \$4.6 million and \$3.0 million, respectively, in cash and cash equivalents, and restricted cash.

Operating Activities

Net cash used in operating activities from continuing operations was \$2.9 million for the year ended December 31, 2019, the decrease in cash was primarily as a result of (i) net loss of \$15.1 million, (ii) change in tax penalty of \$6.9 million, and (iii) change in advance from customers of \$8.4 million, and (iv) change in inventories of \$2.0 million; the decrease was partially offset by (i) change in accounts payable of \$7.8 million, (ii) Provision for prepaid and other current assets of \$4.1 million, (iii) change in notes receivable of \$4.8 million, (iv) change in project assets of \$3.3 million, and (v) change in accounts receivable of \$3.1 million.

Net cash provided by operating activities from continuing operations was \$7.9 million for the year ended December 31, 2018, the increase in cash was primarily as a result of (i) change in project assets of \$17.8 million, and (ii) change in inventories of \$2.9 million, (iii) change in accounts payable of \$3.4 million, (iv) non cash share-based compensation of \$2.7 million, and (v) change in accrued liabilities and other liabilities of \$4.0 million, (vi) depreciation of \$1.2 million, (vii) amortization of debt discount of convertible bonds of \$1.9 million; the increase was partially offset by (i) net loss of \$12.3 million, (ii) change in accounts receivable of \$13.9 million, (iii) change in advance from customers of \$5.1 million, and (iv) gain on troubled debt restructuring of \$1.9 million.

Investing Activities

Net cash used in investing activities from continuing operations was \$7.9 million for the year ended December 31, 2019, primarily as a result of the acquisition of PV station in Greece of \$8.3 million and acquisitions of property, plant and equipment of \$4.8 million, partially offset by proceeds from sale of cryptocurrencies of \$3.6 million and proceeds from disposal of affiliated entities of \$4.5 million.

Net cash used in investing activities from continuing operations was \$3.3 million for the year ended December 31, 2018, primarily as a result of decrease of cash due to disposition of SPI China.

Financing Activities

Net cash generated from financing activities from continuing operations was \$9.5 million for the year ended December 31, 2019, the increase in cash was primarily the result of proceeds from issuance of common stocks of \$7.7 million and proceeds from issuance of convertible bond of \$1.3 million.

Net cash used in financing activities from continuing operations was \$1.6 million for the year ended December 31, 2018, the decrease in cash primarily consisted of (i) repayment of line of credit and loans payable of \$67.8 million; the decrease was partially offset by (i) proceeds from line of credit and loans payable of \$66.2 million.

Capital Resources and Material Known Facts on Liquidity

We have suffered recurring losses from operations. We have incurred a net loss of \$15.1 million for the year ended December 31, 2019. As of December 31, 2019, we had an accumulated deficit of \$585.4 million and working capital deficit of \$113.5 million. As of December 31, 2019, \$55.9 million of convertible bonds was due within one year. These raised substantial doubt about our ability to continue as a going concern.

We have revised the assumptions underlying our existing operating plans and 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 2018 and 2019. These initiatives included:

- Working capital management. The Group sold several PV projects in Japan and US, and is actively negotiating with the buyers to mobilize cash collection. In addition, the Group has intention to sell all the PV projects in Italy and US. The sales of these projects are expected to bring in significant amount of cash to the company to improve liquidity and capital to reinvest into new solar projects. Except for the PV projects in US to be constructed, the Group has been closely monitoring the Group's capital spending level until its liquidity position has improved. These initiatives are aimed at preserving cash and generating operating cash flows to enable the Group to repay its borrowings and accounts payable.
- Cost saving measures. The Group has implemented certain measures with an aim to reduce its operating expenses in 2020. Such measures include: 1) strictly controlling and reducing business, marketing and advertising expenses in United States and Australia; 2) lowering the remuneration of the Group's management team.

However, we cannot assure you that this liquidity plan will be successful executed. See "[Item 3. Key Information—D. Risk Factors—Risks Related to Our Business and Industry](#)". Historically, we have incurred net losses, experienced net cash outflows from operating activities and recorded working capital deficit. If we do not effectively manage our cash and other liquid financial assets and execute our liquidity plan, we may not be able to continue as a going concern."

Capital Expenditures

We incurred capital expenditures of \$0.3 million, \$0.1 million and \$1.5 million in 2017, 2018 and 2019, respectively. Capital commitments amounted to approximately \$5.1 million as of December 31, 2019. These capital commitments will be used primarily for the construction of our solar projects. We expect to finance construction of these projects using cash from our operations and private placements, bank borrowings as well as other third-party financing options.

Research and development, patents and licenses, etc.

We have discontinued our manufacturing business and liquidated our research and development function.

Trend information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for 2019 that 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.

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, 2019:

Contractual Obligations	Payment due by period				
	Total	less than 1 year	1-3 years	3-5 years	more than 5 years
			(\$ in thousands)		
Convertible bonds	\$ 55,907	\$ 55,907	\$ —	\$ —	\$ —
Short-term borrowings	2,857	2,857	—	—	—
Long-term debt obligations	6,039	—	504	636	4,899
Operating lease obligations	2,835	546	601	286	1,402
Capital commitment	5,144	5,144	—	—	—
Due to an affiliate	2,037	309	619	619	490
Total	\$ 74,819	\$ 64,763	\$ 1,724	\$ 1,541	\$ 6,791

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES**A. Directors and Senior Management**

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	45	Director, Executive Chairman of the Board of Directors and Chief Executive Officer
Maurice Ngai	58	Director
HoongKhoeng Cheong	55	Director and Chief Operating Officer
Lu Qing	49	Director
Jing Zhang	65	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.

Dr. Maurice Wai-fung Ngai has served as our director since May 9, 2016. Dr. Ngai is a member of the Working Group on Professional Services under the Economic Development Commission of HKSAR, a director of Hong Kong Coalition of Professional Services, the President of the Hong Kong Institute of Chartered Secretaries (2015), a General Committee member of The Chamber of Hong Kong Listed Companies, a member of Qualification and Examination Board of the Hong Kong Institute of Certified Public Accountants and the Adjunct Professor of Law of Hong Kong Shue Yan University. 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 in a selected talent pool of State-owned Assets Supervision and Administration of the State Council (SASAC) and is serving as an independent non-executive director of several reputable listed companies.

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 Flextronics International Ltd. 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. 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 operations, and acts as the special consultant to Peking Certified Public Accountants. 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 2005 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 the Master degree in Management Engineering from Jiangsu University.

B. Compensation of Directors and Executive Officers

For the year ended December 31, 2019, the aggregate cash compensation and benefits that we paid to our directors and executive officers was approximately \$3,129,680. No pension, retirement or similar benefits have been set aside or have accrued by us for our executive officers of directors.

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 Redomicle 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 terminated automatically in 2016 pursuant to its terms. 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.

2015 Equity Incentive Plan

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 is nine percent (9%) of the number of outstanding and issued ordinary shares of the Company. 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:

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.

Option Awards

The following table summarizes the outstanding options that we granted to our directors and executive officers and to other individuals as a group under both of our 2006 Equity Incentive Plan and our 2015 Equity Incentive Plan as of the date of this annual report. We have not granted any outstanding options other than to the individuals named below.

Name	Number of Shares	Exercise Price (\$)	Grant Date	Expiration Date
Xiaofeng Peng	100,000	\$3.63	September 2017	September 2027
Maurice Ngai	3,600*	\$62	May 2016	May 2026
	3,600	\$62	May 2016	May 2026
	5,000	\$3.63	September 2017	September 2027
HoongKhoeng Cheong	46,000*	\$3.63	September 2017	September 2027
Qing Lu	800*	\$3.63	September 2017	September 2027
Jing Zhang	20,000*	\$0.66	March 2020	March 2030
Directors and executive officers as a group	179,000*	From \$0.66 to \$62	From August 2013 to March 2020	From May 2026 to September 2030
Other individuals as a group	92,200**			

* Upon exercise of all share options, would beneficially own less than 5.0% of our then outstanding share capital.

** Upon exercise of all share options, each such individual would beneficially own less than 1.0% of our then outstanding share capital.

C. Board Practices

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 law of our home country, which is the Cayman Islands, does not require a majority of the board of directors of our Company to be composed of independent directors, nor does the Cayman Islands law require that of a compensation committee or a nominating committee. We intend to follow our home country practice with regard to composition of the board of directors. 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.

Committees of the Board of Directors

We have an audit committee, a compensation committee and a nominating and corporate governance committee under the board of directors. We have adopted a charter for each of the three committees. Each committee’s members and functions are described below.

Audit Committee

Our audit committee consists of Maurice Ngai, Qing Lu and Jing Zhang, and is chaired by Maurice Ngai. All of the members of our audit committee satisfy the “independence” requirements of Rule 10A-3 under the Exchange Act and Rule 5605 of the NASDAQ 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.

Compensation Committee

Our compensation committee consists of Qing Lu, Maurice Ngai and Jing Zhang, and is chaired by Qing Lu. Maurice Ngai, Qing Lu and Jing Zhang satisfy the "independence" requirements of Rule 10A-3 under the Exchange Act and Rule 5605 of the NASDAQ Rules. 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.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Jing Zhang, Maurice Ngai, and Qing Lu, and is chaired by Jing Zhang. Jing Zhang, Maurice Ngai and Qing Lu satisfy the "independence" requirements of Rule 10A-3 under the Exchange Act and Rule 5605 of the NASDAQ Rules. 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.

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.

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 2020. 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 the Company's 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.

D. Employees

As of December 31, 2017, 2018 and 2019, we had 63, 49 and 57 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, 2019:

Major functions	As of December 31, 2019
Managerial functions	33
Operating functions	20
Others	4
Total	<u>57</u>

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.

As required by regulations in China, we participated in various employee social security plans that are organized by municipal and provincial governments, including pension, unemployment insurance, childbirth insurance, work-related injury insurance, medical insurance and housing insurance. We were also required under PRC law to make

contributions to employee benefit plans at specified percentages of the salaries, bonuses and certain allowances of our employees, up to a maximum amount specified by the local government from time to time. Since we divested our Chinese operation in December 2018, we are no longer subject to these laws.

E. Share Ownership

The following tables set forth information with respect to the beneficial ownership of our shares as of the date of the 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	5,339,340	35.99%
Maurice Wai-fung Ngai, Director	*	*
Qing Lu, Director	*	*
Jing Zhang, Director	*	*
HoongKhoeng Cheong, Director and Chief Operating Officer	*	*
All Directors and Executive Officers as a Group ²	6,071,140	42.20%

- (1) Consists of 2,000 ordinary shares and options to purchase 50,000 ordinary shares, Mr. Xiaofeng Peng, as the spouse of Ms. Shan Zhou, may be deemed to beneficially own the 875,000 ordinary shares of the Company held by Ms. Shan Zhou. Furthermore, LDK New Energy Holding Limited, or LDK Energy, directly owns 3,412,340 ordinary shares. As the spouse of Ms. Shan Zhou, who is the sole shareholder and a director of LDK Energy, Mr. Peng may be deemed to beneficially own such 3,412,340 ordinary shares beneficially owned by LDK Energy. Lighting Charm Limited holds an option to purchase 1,000,000 ordinary shares. As the spouse of Ms. Shan Zhou, who is the sole shareholder and a director of Lighting Charm Limited, Mr. Peng may be deemed to beneficially own such 1,000,000 ordinary shares beneficially owned by Lighting Charm Limited.

- (2) Consists of an aggregate of 4,973,840 ordinary shares and options to purchase an aggregate of 1,097,300 ordinary shares.

* Less than 5.0%.

Principal Shareholders	Ordinary Shares Beneficially Owned	Percentage Beneficially Owned
LDK Solar USA, Inc. (1)	1,317,463	8.88%
LDK Solar Europe Holding SA (2)	97,712	0.66%
Shan Zhou(3)	5,339,340	35.99%
UPC CO., LTD. (4)	1,350,000	9.10%
Qian Kun Prosperous Times Investment Limited (5)	800,000	5.40%

- (1) LDK Solar USA, Inc. LDK Solar USA, Inc. is wholly owned by LDK Solar CO., Ltd. The address of LDK Solar USA, Inc. LDK Solar USA, Inc. is One Front Street, Suite 1600, San Francisco, CA 94111, USA.
- (2) LDK Solar Europe Holding S.A. is wholly owned by LDK Solar International Co., Ltd., which is in turn wholly owned by LDK Solar CO., Ltd. The address of LDK Solar Europe Holding S.A. is 898, rue Pafebruch, L-8308, Capellen RCS, Luxembourg.
- (3) Consists of 875,000 ordinary shares held by Ms. Shan Zhou and 3,412,340 ordinary shares beneficially owned by LDK Energy. As the spouse of Mr. Peng, Ms. Shan Zhou may also be deemed to beneficially own 2,000 ordinary shares and 50,000 ordinary shares that Mr. Peng has the option to purchase. Lighting Charm Limited holds an option to purchase 1,000,000 ordinary shares. As the sole shareholder and a director of Lighting Charm Limited, Ms. Shan Zhou may be deemed to beneficially own such 1,000,000 ordinary shares beneficially owned by Lighting Charm Limited.

- (4) Mrs. Qiuyue Liu is the natural person who has sole voting and investment power over 1,350,000 ordinary shares of the company shares held through UPC CO., LTD. The address of UPC CO., LTD. is at Floor 4, Willow house, cricket square, PO Box 2804, Grand Cayman, KY1-1112, Cayman Islands.
- (5) Mr. Yunshi Wang is the natural person who has sole voting and investment power over 800,000 ordinary of the company shares held through Qian Kun Prosperous Times Investment Limited. The address of Qian Kun Prosperous Times Investment Limited is Sea Meadow House, Blackburne Highway, (P.O. Box 116), Road Town, Tortola, British Virgin Islands.

As of the date of this annual report, 14,837,469 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.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

Please refer to “Item 6. Directors, Senior Management and Employees—E. Share Ownership.”

B. Related Party Transactions

Transactions with Our Directors, Executive Officers and Shareholders

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.

Employment Agreements

See “[Item 6. Directors, Senior Management and Employees—C. Board Practices—Employment Agreements.](#)”

Share Incentives

See “[Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers](#)” for a description of share options that we have granted to our directors, officers and other individuals as a group.

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

We have appended consolidated financial statements filed as part of this annual report.

Legal and Administrative Proceedings

Some of our previous employees filed lawsuits in late 2015 and early 2016 against us for breach of their prior employment contracts with us. As of the date of this annual report, we have reached a settlement with Michael Turco, Taimur Jamil, Sharon Mauer, William Heck and Brain Lessig and the court has administratively closed those matters.

There is only one unclosed employee lawsuit with Kevin Adler, which we and Kevin Adler have reached a settlement in February 2020. The lawsuit is pending final adjournment upon the payment of all settlement amount.

There is currently an ongoing dispute in Greece 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 ENERGIKI SOCIETE ANONYME”, “ORION ENERGIKI SOCIETE ANONYME PHOTOVOLTAICON ERGON”, “ASTRAIOS ENERGIKI 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.

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.

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. Company is contesting these claims. Meanwhile, SINSIN has obtained the status of a precautionary garnishee order against the Company as security for its claims and has had the same order served on SRIL with a view to freezing any payments that may be due by the target company to its shareholders, the Company.

The production of evidence in both arbitration cases has been completed and the parties have also produced very extensive written final submissions in relation to the cases. They have also filed their respective rebuttals to the submissions.

Unless there are any unforeseen circumstances or developments, we expect that the Tribunal is now in a position to move to deliberate the cases with a view to issuing its final awards in both cases concurrently. While no specific date has been given or agreed for the delivery of the awards, in July 2019 the Tribunal had indicated that it expected to be in a position to issue the awards by the end of second quarter in 2020. It is possible that the Tribunal will require more time for this purpose.

The cases are vigorously contested and both parties have produced substantive evidence and plausible submissions with regard to their interpretation of the facts and the application of relevant laws to the circumstances. The likelihood of success for either party is very difficult to assess at this time. We believe that there is a possibility that the Tribunal could accept both Parties' claims (in part) thereby giving an award which is of limited success to each party. We believe that at best there is a 50% chance of obtaining a favourable award in favour of the Company.

In a best-case scenario, should an award in favour of the Company be given, the Company would be awarded damages in the sum of Euro54 million together with interest and costs of the Arbitration held in Malta. On the other end of the spectrum and in a worst-case scenario, an arbitral award given in favour of SINSIN would lead to an award ordering the Company to pay Euro38 million in outstanding payments plus an unquantified amount in additional damages, together with legal interest and costs. The damages will need to be liquidated and quantified by the Tribunal.

It should also be noted that if there is an Award with costs against the Company, fees and costs payable to the arbitral tribunal and to counsel is expected to be material and could be as high as Euro 1 million in the aggregate.

In June 2018, ENS obtained a default judgement invalidating the Governance Agreement. In March 2019, ENS made an assignment for benefit of creditors which assignment is part of a Wisconsin Chapter 128 receivership initiated by creditor Analytics Plus, LLC Captioned *Analytics Plus, LLC v. Ensync, Inc.*, Waukesha County Circuit Court Case No. 19-CV-556 (the "Chapter 128 Proceeding"). The Company has instructed to vigorously pursue all legal remedies available to the Company.

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.

The Company is currently involved in a potential lawsuit against 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. 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, 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. The Company has instructed to vigorously pursue all legal remedies available to the Company.

In May 2020, Solar Juice Co. Ltd ("Solar Juice Co"), a wholly owned subsidiary of the Company, in its capacity as shareholder of Solar Juice Australia (an Australian company) together with Mr. Kun Fong Lee and Mr. Jinhan Zhou (who hold shares in Solar Juice Australia as trustee for Solar Juice Co) ("SPI Shareholders") commenced proceedings in the Federal Court of Australia as plaintiffs against its other shareholders and some of its other directors and purported directors and against Solar Juice Australia ("Defendants") in relation to a purported new rights issue undertaken by Solar Juice Australia, the purported removal by those other shareholders of Mr. Kun Fong Lee and Mr. Jinhan Zhou as directors of Solar Juice Australia and the purported appointment of an additional director. The SPI Shareholders allege that the purported new rights issue and the subsequent purported removal and appointment of directors are invalid and ineffective and therefore should be set aside. If effective, the purported rights issue will result in the SPI Shareholders' shareholding in Solar Juice Australia being reduced from 80% to 40%. The parties to the litigation have requested that the case be expedited but it is current unknown when a final hearing will take place.

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, it does not believe that an adverse result in any pending legal or regulatory proceeding, individually or in the aggregate, would be material to our consolidated financial condition or cash flows. However, an unfavorable outcome could have a material adverse effect on our results of operations for a specific interim period or year.

Dividend Policy and Dividend Distribution

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.

B. Significant Changes

Except as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of our audited consolidated financial statements included in this annual report.

ITEM 9. THE OFFER AND LISTING

A. Offering and Listing Details

Our ADSs, each representing ten ordinary shares, have been listed on the NASDAQ Global Select Market between January 19, 2016 and September 18, 2017. Our Ordinary Shares have been listed on the Nasdaq Global Select Market since September 18, 2017.

B. Plan of Distribution

Not Applicable.

C. Markets

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”. Our ordinary shares have been listed on the NASDAQ Global Select market since September 19, 2017 under the symbol “SPI”.

D. Selling Shareholders

Not Applicable.

E. Dilution

Not Applicable.

F. Expenses of the Issue

Not Applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not Applicable.

B. Memorandum and Articles of Association

The registered office of our Company is at the offices of Harneys Fiduciary (Cayman) Limited, PO Box 10240, 103 South Church Street, 4th floor, Harbour Place, George Town, Cayman Islands. The objects for which the Company is established are unrestricted, and the Company has full power and authority to carry out any object not prohibited by the laws of the Cayman Islands.

The following summarizes material provisions of our currently effective amended and restated memorandum and articles of association, as well as the Companies Law (2020 Revision) of the Cayman Islands, which is referred to as the Companies Law below, insofar as they relate to the material terms of our ordinary shares.

General

All of our issued and outstanding ordinary shares are fully paid and non-assessable. Our ordinary shares are issued in registered form, and are issued when registered in our register of members. Our shareholders who are non-residents of the Cayman Islands may freely hold and transfer their ordinary shares.

Dividends

The holders of our ordinary shares are entitled to such dividends as may be declared by our board of directors, subject to the Companies Law and the memorandum and articles of association of our Company, as amended and restated from time to time. In addition, our shareholders may by ordinary resolution declare a dividend, but no dividend may exceed the amount recommended by our directors. 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, and provided further that a dividend may not be paid if this would result in us being unable to pay our debts as they fall due in the ordinary course of business.

Register of Members

Under Cayman Islands law, we 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, our register of members is *prima facie* evidence of the matters set out therein (namely, 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. If the name of any person is incorrectly entered in or omitted from our register of members, or if there is any default or unnecessary delay in entering on the register the fact of any person having ceased to be a member of our Company, the person or member aggrieved (or any member of our Group or our Company itself) may apply to the Grand Court of the Cayman Islands for an order that the register be rectified, and the Court may either refuse such application or it may, if satisfied of the justice of the case, make an order for the rectification of the register.

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 the meeting 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 us 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 us 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 our amended and restated memorandum and articles of association, we expect to hold shareholders' meetings annually and such meetings may be convened by our board of directors on its own initiative or upon a request to the directors by shareholders holding in aggregate at least one-third of the votes attaching to the issued and outstanding shares that carry the right to vote at general meetings. Advance notice of at least 14 days is required for the convening of our 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 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 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 our articles of association, as applicable, any of our 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 our board of directors.

Our 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 we have a lien. Our directors may also decline to register any transfer of any ordinary share unless:

- the instrument of transfer is lodged with us, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as our 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;
- the ordinary shares transferred are free of any lien in favor of us; and
- a fee of such maximum sum as NASDAQ may determine to be payable, or such lesser sum as our board of directors may from time to time require, is paid to us in respect thereof.

If our 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 of members closed at such times and for such periods as our board of directors may from time to time determine; provided, however, that the registration of transfers shall not be suspended and the register of members shall not be closed for more than 30 days in any year.

Liquidation

On a winding up of our Company, if the assets available for distribution among our 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 our 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 us for unpaid calls or otherwise. If our 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 our shareholders in proportion to the par value of the shares held by them.

Calls on Ordinary Shares and Forfeiture of Ordinary Shares

Our 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

We may issue shares on terms that are subject to redemption, at our 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 our board of directors or by a special resolution of our shareholders. We may also repurchase any of our shares provided that the manner and terms of such purchase have been approved by our board of directors or by ordinary resolution of our shareholders, or are otherwise authorized by our memorandum and articles of association. Under the Companies Law, the redemption or repurchase of any share may be paid out of our 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 we can, immediately following such payment, pay our 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, we 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 our ordinary shares have no general right under Cayman Islands law to inspect or obtain copies of our list of shareholders or our corporate records. However, we will provide our shareholders with annual audited financial statements.

Changes in Capital

We may from time to time by ordinary resolution:

- increase our 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 our share capital into shares of a larger amount than our existing shares;
- convert all or any of our paid-up shares into stock and reconvert that stock into paid up shares of any denomination;
- sub-divide our 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 our 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 us for an order confirming such reduction, we may by special resolution reduce our share capital and any capital redemption reserve in any manner authorized by law.

Issuance of Additional Preferred Shares

Our amended and restated memorandum and articles of association authorizes our board of directors to issue additional ordinary shares from time to time as our board of directors shall determine, to the extent of available authorized but unissued shares.

Our amended and restated memorandum and articles of association authorizes our 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.

Our board of directors may issue preferred shares without action by our shareholders to the extent of available authorized but unissued shares. 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.

C. Material Contracts

In the past two years, we have not entered into any material contracts other than in the ordinary course of business and other than those described in “Item 4. Information on the Company—B. Business Overview,” “Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions,” or elsewhere in this annual report on Form 20-F.

D. Exchange Controls

See “[Item 3. Key Information—D. Risk Factors—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,” “Item 4. Information on the Company—B. Business Overview—Regulations—Foreign Currency Exchange” and “Item 4. Information on the Company—B. Business Overview—Regulations—Dividend Distribution.”

E. 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 1 January 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) Law, (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 related guidance was published on 30 April 2019.

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 outside in US, the Company has been determined that it is either not a Relevant Entity (i.e. an “investment fund” or tax resident in another jurisdiction) or not conducting a Relevant Activity 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 as a U.S. corporation for U.S. federal income tax purposes and all purposes under the Code.

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.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

We are subject to the periodic reporting and other informational requirements of the Exchange Act as applicable to foreign private issuers. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F no later than four months after the close of each fiscal year, which is December 31. Copies of reports and other information, when so filed with the SEC, can be inspected and copied at our executive offices. The SEC also maintains a web site at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. As a foreign private issuer, we are exempt from the rules of the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and our executive officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act. In addition, we are not required under the Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act.

In accordance with Rule 5250(d) of the NASDAQ Rules, we will post this annual report on Form 20-F on our website at <http://www.spigroups.com>.

I. Subsidiary Information

Not applicable.

ITEM 11. 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 translation may have an adverse impact on our consolidated financial statements. In 2017, 2018 and 2019, we recorded foreign exchange loss of \$5.1 million, gain of \$1.1 million and gain of \$1.3 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 \$0.1 million and \$0.1 million in interest expense for the years ended December 31, 2018 and 2019. 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 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not Applicable.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

We have outstanding convertible bonds of US\$55.0 million, which were defaulted in June 2016 and not repaid as at December 31, 2016. On February 12, 2017, we entered into an Amendment Agreement (“Agreement”) with Union Sky Group Limited, one of the holders of our convertible bonds, to extend the maturity date of the bonds, pursuant to which the repayment of US\$6.6 million, US\$6.7 million and US\$6.7 million of the principal amount of the convertible bond will be due by April 30, 2017, January 30, 2018 and January 30, 2019, respectively. Union Sky Group Limited has the option to convert the outstanding amounts under the convertible bond into equity interest in our company at a certain conversion price. We were not able to make the first repayments of April 29, 2017. We have been in communications with the holders of our convertible bonds, including Union Sky Group Limited, to further extend the maturity date of the bonds, and On June 29, 2018, the Company entered into the 2nd Amendment with the Union Sky Group Limited and Magical Glaze Limited (the “MGL”), a company incorporated under the laws of British Virgin Islands, pursuant to which agreement the Union Sky Group Limited has transferred all the rights and obligations under the Convertible Bond Agreement and 1st Amendment to MGL, and the maturity date of the note was extended. According to the 2nd Amendment, the repayment of US\$6.6 million, US\$6.7 million and US\$6.7 million of the principal amount of the note and interest thereon is due by December 2019, June 2020 and December 2020, respectively. As of the date of this annual report, we missed the December 2019 repayment and expect to miss the June 2020 repayment. We have been working on negotiating a third amendment to the Convertible Bond Agreement but have not yet obtained a further extension from the bond holders.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

A.-D. Material Modifications to the Rights of Security Holders

On January 4, 2016, pursuant to the terms of the Second Amended and Restated Agreement and Plan of Merger and Reorganization dated October 30, 2015, SPI merged with and into a wholly-owned subsidiary of our Company. This resulted in the redomiciliation of SPI to the Cayman Islands and our Company becoming our holding company. Upon completion of the Redomicle Merger, each ten shares of SPI’s common stock acquired before the relevant F-4 registration statement became effective converted into the right to receive one ADS, representing ten ordinary shares in the capital of our Company, and each right to purchase shares of SPI’s common stock automatically converted into an equivalent right to purchase ordinary shares of our Company. Accordingly, the shares became governed by our Company’s amended and restated memorandum and articles of association. See “[Item 10. Additional Information—Memorandum and Articles of Association.](#)”

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 depositary bank for our ADS facility, terminated our ADS facility on September 18, 2017. Following such termination, we listed our ordinary shares, par value US\$0.0001 each, for trading on NASDAQ Global Select Market in substitution for our ADSs. On September 19, 2017, the substitution listing became effective and our ordinary shares began trading on the NASDAQ Global Select Market under the symbol of “SPI”.

Except for the foregoing, there have been no changes to the instruments defining the rights of the holders of any class of our registered securities, and the rights of holders of our registered securities have not been altered by the issuance or modification of any other class of our securities. There has been no removal or substitution of assets securing any class of our registered securities. None of our registered securities have a trustee or paying agent.

E. Use of Proceeds

Not applicable.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our executive management is responsible for establishing and maintaining a system of disclosure controls and procedures (as defined in Rule 13a-15 and 15d-15 under the Exchange Act) designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Our executive management concluded that, because of the material weaknesses in our internal control over financial reporting discussed below, our disclosure controls and procedures were not effective as of December 31, 2019. Notwithstanding the material weaknesses discussed below, our executive management has concluded that the consolidated financial statements included in this Form 20-F present fairly, in all material respects, our financial position, results of operations and cash flows for the periods presented in conformity with accounting principles generally accepted in the U.S.

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 such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by, or under the supervision of, our chief executive officer, 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. Internal control over financial reporting includes those policies and procedures which (a) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (b) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of ours are being made only in accordance with authorizations of our management and directors; and (c) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Management, including our chief executive officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria for effective internal control over financial reporting described in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our consolidated financial statements will not be prevented or detected on a timely basis. Based on management's assessment of the effectiveness of our internal control over financial reporting, management has identified the following material weaknesses in our internal control over financial reporting as of December 31, 2019:

- Lack of an internal audit department since April 2017, and internal audit evaluation work was not performed during the year ended December 31, 2019.
- We didn't have adequate risk assessment procedures, including those on identification and assessment of fraud risks, to cope with the expansion of its business and organization. In particular, we did not put in place an adequate process to continuously assess the legal, compliance and fraud risks associated with the business initiatives and the related financial impact. As a result, we did not properly account for certain transactions, which led to significant adjustments to the consolidated financial statements for the year ended December 31, 2019.

- Our review controls over management's judgment and financial statement assertions were ineffective with respect to certain significant transactions including impairment charges on project assets and accounting for convertible bonds. Our review controls in these areas were not effective, as we failed to prepare sufficient documentation on the judgment made and the significant assumptions used in accounting for the transactions. As a result, there were material adjustments on convertible bonds, impairment charges on project assets and accrued liabilities reflected in the consolidated financial statements for the year ended December 31, 2019.
- We did not have adequate controls on the internal communication between finance team and operation team related to the status of the construction of project assets, execution of contracts and conclusion of business decisions. This deficiency has resulted in the finance team not having accurate or updated information necessary to properly assess the accounting treatment for the relevant business transactions. As a result, there were material adjustments to the consolidated financial statements for the year ended December 31, 2019.
- We did not have adequate communications between the headquarter and subsidiaries, and lack of sufficient supervision over the local management team, related to the daily operation of the subsidiaries.
- We had insufficient resources for financial information processing and reporting and lack of appropriate GAAP knowledge. As a result, there was material adjustments to the consolidated financial statements for the year ended December 31, 2019.

The material weaknesses described above may result in misstatement of our consolidated financial statements that would not be prevented or detected. As a result of these material weaknesses, management has concluded that our internal control over financial reporting was not effective as of December 31, 2019.

Remediation Activities

Our management has been engaged in, and continues to be engaged in, making necessary changes and improvements to the overall design of controls and procedures to address the material weaknesses in our internal control over financial reporting and the ineffectiveness of our disclosure controls and procedures described above. To remediate the material weaknesses, we will adopt the following changes:

- (i) With respect to the insufficiency of knowledge and experience in U.S. GAAP and the lack of expertise in handling complex accounting and reporting matters, we plan to continue to: (1) provide more comprehensive training on U.S. GAAP to our accounting team and other relevant personnel, and (2) enhance our accounting manual to provide our accounting team with more comprehensive guidelines on the policies and controls over financial reporting under U.S. GAAP and SEC rules and requirements.
- (ii) With respect to inadequate risk assessment controls, we plan to continue to: (1) organize the related department to hold risk assessment discussions before significant business expansion and organization changes, (2) provide more comprehensive training to our accounting team and legal department to improve the risk awareness of unusual and significant transactions, and (3) implement Office Automation System to standardize processes so that unusual and significant transactions can be timely identified and approved properly. (4) enhance the in-house tax department management and improve the tax compliance.
- (iii) With respect to our management review controls over significant judgment and financial statement assertions, we plan to continue to: (1) provide appropriate training on management review standards and requirements to the related business department, and (2) enhance management monitoring and review of key processes with more comprehensive guidelines on the policies and controls over financial reporting.
- (iv) With respect to the deficiencies in internal communication with the company, we plan to continue to organize regular operation meetings between our finance team and operation team to share the status of significant transactions, project assets, execution of contracts and business decisions, among others.

Attestation Report of the Independent Registered Public Accounting Firm

Because we are not an accelerated filer, we are not required to obtain an attestation report of our independent registered public accounting firm.

Changes in Internal Control over Financial Reporting

Other than the changes resulting from the material weakness described above, there have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act) during the fiscal year ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVE

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Maurice Ngai, an independent director, is our audit committee financial expert. Maurice Ngai satisfies the independent requirements of Rule 10A-3 under the Exchange Act and Rule 5605 of the NASDAQ Rules.

ITEM 16B. 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 20-F. The code of business conduct and ethics is also available at our website at www.spigroups.com.

ITEM 16C. PRINCIPAL 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 Bernstein & Pinchuk LLP, our current principal external auditors for the periods indicated.

	2018	2019
Audit fees	\$ 860,000	\$ 440,000
Audit-related fees	—	—
Tax fees	—	—
All other fees	—	—
Total	<u>\$ 860,000</u>	<u>\$ 440,000</u>

- (1) Audit fees consist of fees billed for professional services rendered for the audit 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 2018 and 2019.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not Applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

Not Applicable.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT.

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

As a foreign private issuer whose securities are listed on the NASDAQ Global Select Market, we are permitted to follow certain home country corporate governance practices in lieu of the requirements of the NASDAQ Stock Market Marketplace Rules (the "NASDAQ Rules") pursuant to NASDAQ Rule 5615(a)(3), which provides for such exemption to compliance with the NASDAQ Rule 5600 Series, Rule 5250(b)(3) and Rule 5250(d). We are relying on the exemptions available to foreign private issuers under the NASDAQ Rules and are not obligated to comply with certain exchange corporate governance standards, including the NASDAQ corporate governance standards requiring that:

- the majority of the board of directors be comprised of independent directors;
- executive compensation be determined by independent directors or a committee of independent directors;
- director nominees be selected, or recommended for selection by the board of directors, by independent directors or a committee of independent directors;
- we hold an annual meeting of shareholders no later than one year after the end of our fiscal year-end;
- we make all required disclosures relating to third party director and nominee compensation; and
- we make available and distribute our annual and interim reports to all shareholders.

Our Cayman Islands counsel, has advised us that there are no comparable Cayman Islands laws related to the above corporate governance standards.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

PART III**ITEM 17. FINANCIAL STATEMENTS**

We have elected to provide financial statements pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

The consolidated financial statements of SPI Energy Co., Ltd. are included at the end of this annual report beginning on page F-1.

ITEM 19. EXHIBITS

Exhibit Number	Description of Document
1.1	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)
2.1	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)
4.1	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)
4.2	2015 Equity Incentive Plan (incorporated by reference to Exhibit 10.2 to our registration statement on Form F-4 (file No. 333-204069) filed with the Securities and Exchange Commission on May 11, 2015)
4.3	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)
4.4	Translation of Capital Increase and Share Subscription Agreement among Meitai Investment (Suzhou) Co., Ltd., Beijing DingdingYiwei New Energy Technology Development Co., Ltd. and shareholders of Beijing DingdingYiwei New Energy Technology Development Co. Ltd., dated September 1, 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 September 4, 2015)
4.5	Exchange and Release Agreement dated December 26, 2013 (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 February 21, 2014)
4.6	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)
4.7	Second Amended and Restated Operating Agreement for KDC Solar Mountain Creek Parent LLC dated February 18, 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 February 21, 2014)
4.8	First Amended and Restated Exchange and Release Agreement dated April 17, 2014 (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 23, 2014)

- 4.9 [Third Amended and Restated Operating Agreement for KDC Solar Mountain Creek Parent LLC dated April 17, 2014](#) (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 23, 2014)
- 4.10 [Equity Cash Flow Letter dated April 17, 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 April 23, 2014)
- 4.11 [Translation of Share Purchase Agreement by and between SPI Solar Power Suzhou Co., Ltd. and China Energy Power Group Operation and Maintenance Management Jiangsu Co., Ltd. dated October 22, 2014](#) (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 October 23, 2014)
- 4.12 [Translation of Share Purchase Agreement by and between SPI Solar Power Suzhou Co., Ltd. and Liaoning Xinda New Energy Investment Co., Ltd. dated October 22, 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 October 23, 2014)
- 4.13 [Translation of Equity Purchase Agreement by and between SPI Solar Power Suzhou Co., Ltd., Beijing Taihedafang Investment Development Co., Ltd. and XingheChaerhu Development Co., Ltd. dated October 22, 2014](#) (incorporated by reference to Exhibit 10.4 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on October 23, 2014)
- 4.14 [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)
- 4.15 [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)
- 4.16 [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)
- 4.17 [Purchase Agreement by and between Solar Power, Inc. and Forwin International Financial Holding Limited dated December 12, 2014](#) (incorporated by reference to Exhibit 10.11 to our current report on Form 8-K (file No. 000-50142) filed with the Securities and Exchange Commission on December 18, 2014)
- 4.18 [Stock Purchase Agreement by and among CECEP Solar Energy Hong Kong Co., Limited, SPI China \(HK\) Limited and Solar Power, Inc. dated January 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 January 16, 2015)
- 4.19 [Option Agreement by and between Solar Power, Inc. and Central Able Investments Limited dated January 22, 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 January 23, 2015)
- 4.20 [Share Purchase Agreement by and among SPI China \(HK\) Limited, LDK Solar Europe Holding S.A. and LDK Solar USA, Inc. dated March 30,](#)

[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 March 31, 2015)

4.21

[Share Purchase Agreement by and among SPI China \(HK\) Limited., Andrew Burgess, Rami Fedda and Allied Energy Holding Pte Ltd. dated March 31, 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 March 31, 2015)

- 4.22 [Membership Interest Purchase Agreement by and among Solar Power, Inc., William Hedden, as Trustee of the William H. Hedden and Sandra L. Hedden Trust, Stephen C. Kircher, the chief strategy officer of SPI, as Trustee of the Kircher Family Irrevocable Trust dated December 29, 2004, and Steven Kay, dated March 31, 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 6, 2015)
- 4.23 [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)
- 4.24 [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)
- 4.25 [Translation of Share Purchase Agreement by and among Solar Power, Inc., Meitai Investment \(Suzhou\) Co., Ltd., Zhong Junhao, Li Jin, Tong Ling Hong Xin Ling Xiang Investment Partnership, Shanghai Yi Ju Sheng Yuan Investment Center, Shanghai Ninecity Investment Holding \(Group\) Ltd., Shanghai Yi Ju Sheng Quan Equity Investment Center, Shanghai Panshi Investment Co., Ltd. and Shanghai All-Zip Roofing System Group Co., Ltd. dated April 30, 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 30, 2015)
- 4.26 [Purchase Agreement by and between Solar Power, Inc. and Yes Yield Investments Limited dated May 4, 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 May 7, 2015)
- 4.27 [Option Agreement by and between Solar Power, Inc. and Yes Yield Investments Limited dated May 4, 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 May 7, 2015)
- 4.28 [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)
- 4.29 [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)
- 4.30 [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)
- 4.31 [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)
- 4.32 [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)
- 4.33 [Purchase Agreement by and between Tiger Capital Fund SPC and SPI Energy Co., Ltd. dated April 24, 2017](#) (incorporated by reference to Exhibit 4.40 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)

- 4.34 [Purchase Agreement by and between Qian Kun Prosperous Times Investment Limited and SPI Energy Co., Ltd. dated July 6, 2017](#) (incorporated by reference to Exhibit 4.41 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)
- 4.35 [Purchase Agreement by and between Qian Kun Prosperous Times Investment Limited and SPI Energy Co., Ltd. dated October 10, 2017](#) (incorporated by reference to Exhibit 4.42 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)
- 4.36 [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)
- 4.37 [Framework Share Purchase Agreement by and among SPI Energy Co., Ltd., Thelmico Limited, SP ORANGE POWER \(CYPRUS\) LIMITED, THERMI Taneo Venture Capital Fund and other parties named therein, dated September 20, 2017](#) (incorporated by reference to Exhibit 4.44 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)
- 4.38 [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)
- 4.49 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and Happy Goal Industries 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)
- 4.50 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and CHEONG Hoong Khoeng](#) (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)
- 4.51 [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)
- 4.52 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and LIM Joo Heng](#) (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)
- 4.53 [Share Purchase Agreement dated January 15, 2019 between SPI Energy Co., Ltd. and UPC Co., Ltd.](#) (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)
- 4.54 [Share Purchase Agreement dated March 20, 2019 between SP Orange Power \(Cyprus\) Limited and Thermi Taneo Venture Capital Fund](#) (incorporated by reference to Exhibit 4.38 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)
- 4.55* [Membership Interest Purchase Agreement for Oregon Portfolio dated on July 15, 2019 between Sulus LLC and SPI Solar, Inc.](#)
- 4.56* [Common Stock Purchase Agreement between Knight AG Holding Co., Ltd. and Jacky Lo.](#)

4.57*	Management Services Agreement dated on July 24, 2019 between Native American Agricultural Company and CBD and Hemp Group Co., Ltd.
4.58*	Equipment Purchase Contract dated on August 6 2019 between CBD and Hemp Group Co., Ltd. and All Datum Inc.
4.59*	Sales and Purchase Agreement dated on July 8 2019 between Bitmain Equipment (Canada) Inc. and 1215542 B.C.LTD
4.60*	Hosting Agreement dated on July 9, 2019 between 1151203 B.C.LTD and 1215542 B.C.LTD
4.61*	Supplemental Agreement dated on October 7, 2019 between 1151203 B.C.LTD and 1215542 B.C.LTD
4.62*	Second Supplemental Agreement dated on March 8, 2020 between 1151203 B.C.LTD and 1215542 B.C.LTD
4.63*	Remote Hash Power Computing Service Agreement dated on July 15, 2019 between 1215542 B.C.LTD and SPI Orange Co., Ltd.
4.64*	Securities Purchase Agreement dated on May 28, 2019 between SPI Energy Co., Ltd. and ILIAD RESEARCH AND TRADING, L.P.
4.65*	Asset Purchase Agreement dated on July 31, 2019 between SPI Solar, Inc. and John M. Wirth
4.66*	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
4.67*	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
4.68*	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
4.69*	Standard Industrialcommercial Single Tenant Lease dated on September 15, 2019 between AI Factory, LLC and SPI Solar, Inc.
5.56*	Amendment to Convertible Promissory Note dated on December 10, 2019 between SPI Energy Co., Ltd. and ILIAD RESEARCH AND TRADING, L.P.
8.1*	List of subsidiaries
11.1	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)
12.1**	Certification of the Principal Executive and Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	Certification of Principal Executive Officer and Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Independent Registered Public Accounting Firm—Marcum Bernstein & Pinchuk LLP
99.1	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)
99.2*	Form of Audit Committee Charter
99.3*	Form of Compensation Committee Charter
99.4*	Form of Nominating and Corporate Governance Committee Charter
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Calculation Presentation Document

* Filed herewith

** Furnished herewith

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing its annual report on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

SPI Energy Co., Ltd.

Date: June 29, 2020

By: /s/ Xiaofeng Peng
Name: Xiaofeng Peng
Title: Chief Executive Officer
(Principal Executive, Financial and Accounting Officer)

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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, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, equity (deficit) and cash flows for each of the three years in the period ended December 31, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 3 to the financial statements, the Company has changed its method of accounting for leases in 2019 due to the adoption of Accounting Standards Codification (“ASC”) Topic 842, Leases (“Topic 842”).

Explanatory Paragraph – Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 2 to the financial statements, the Company has a significant working capital deficiency, has incurred significant losses and needs to raise additional funds to meet its obligations and 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 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.

/s/ Marcum Bernstein & Pinchuk LLP

Marcum Bernstein & Pinchuk LLP

We have served as the Company's auditor since 2018.

Beijing China

June 29, 2020

SPI ENERGY CO., LTD.
CONSOLIDATED BALANCE SHEETS
(In thousands, except for share and per share data)

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 2,764	\$ 4,141
Restricted cash	239	458
Accounts receivable, net	16,539	27,777
Notes receivable	—	526
Inventories, net	13,781	11,906
Project assets, net	17,842	24,654
Prepaid expenses and other current assets, net	5,170	4,382
Amount due from related parties	154	39
Total current assets	<u>56,489</u>	<u>73,883</u>
Intangible assets, net	1,528	1,801
Goodwill	626	651
Other receivable, noncurrent	283	832
Notes receivable, noncurrent	—	4,297
Property, plant and equipment, net	31,783	21,150
Project assets, noncurrent, net	16,495	16,368
Investment in affiliates, net	69,606	69,606
Operating lease right-of-use assets	1,985	—
Deferred tax assets, net	58	140
Total assets	<u>\$ 178,853</u>	<u>\$ 188,728</u>
LIABILITIES AND EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	\$ 19,677	\$ 16,271
Accrued liabilities	9,177	16,495
Income taxes payable	561	293
Advance from customers	17,632	25,984
Short-term borrowings and current portion of long-term borrowings	2,857	3,166
Amount due to an affiliate	9,128	8,819
Convertible bonds, net of unamortized debt discount	55,907	41,600
Derivative liability	652	—
Operating lease liabilities, current	426	—
Amount due to related parties	—	79
Consideration payable	54,000	53,824
Total current liabilities	<u>170,017</u>	<u>166,531</u>

Convertible bonds, noncurrent	—	13,400
Long-term borrowings, excluding current portion	6,039	6,674
Amount due to an affiliate, noncurrent	1,728	—
Deferred tax liabilities	3,506	515
Accrued warranty reserve	1,538	1,538
Operating lease liabilities, non-current	1,500	—
Total liabilities	<u>184,328</u>	<u>188,658</u>
Equity (deficit):		
Ordinary shares, par \$0.0001, 500,000,000 shares authorized, 14,621,125 and 7,914,125 shares issued and outstanding as of December 31, 2019 and 2018, respectively	1	1
Additional paid in capital	612,726	601,319
Accumulated other comprehensive loss	(35,527)	(35,115)
Accumulated deficit	<u>(585,384)</u>	<u>(570,126)</u>
Total deficit attributable to the shareholders of SPI Energy Co., Ltd.	(8,184)	(3,921)
Noncontrolling interests	<u>2,709</u>	<u>3,991</u>
Total (deficit) equity	<u>(5,475)</u>	<u>70</u>
Total liabilities and equity	<u>\$ 178,853</u>	<u>\$ 188,728</u>

The accompanying notes are an integral part of these consolidated financial statements.

SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except for share and per share data)

	For the Years Ended December 31,		
	2019	2018	2017
Net sales	\$ 97,883	\$ 125,582	\$ 121,520
Cost of revenue	90,693	114,525	111,428
Gross profit	7,190	11,057	10,092
Operating expenses:			
General and administrative	15,158	12,225	13,994
Sales, marketing and customer service	2,398	2,285	2,944
Provision (reverse) for doubtful accounts, notes and other receivables	4,115	(501)	1,693
Impairment charges on property, plant and equipment	2,235	—	53
Impairment charges on project assets	2,455	—	687
Total operating expenses	26,361	14,009	19,371
Operating loss	(19,171)	(2,952)	(9,279)
Other income (expense):			
Interest expense	(3,923)	(6,665)	(8,087)
Interest income	155	320	384
Gain on extinguishment of convertible bonds	—	—	7,121
Change in fair value of derivative liability	285	—	—
Reversal (accrual) of tax penalty	6,890	—	(9,670)
Gain on troubled debt restructuring	—	1,887	—
Loss on investment in affiliates	—	—	(2,214)
Net foreign exchange gain (loss)	1,261	1,118	(5,141)
Others	(553)	487	509
Total other income (expense), net	4,115	(2,853)	(17,098)
Loss from continuing operations before income taxes	(15,056)	(5,805)	(26,377)
Income tax expense	92	332	137
Loss from continuing operations including noncontrolling interests	\$ (15,148)	\$ (6,137)	\$ (26,514)
Loss from discontinued operations, net of tax	—	(6,122)	(64,445)
Net loss including noncontrolling interests	\$ (15,148)	\$ (12,259)	\$ (90,959)
Less: Net income attributable to noncontrolling interests from continuing operations	110	31	168
Less: Net loss attributable to noncontrolling interests from discontinued operations	—	(8)	(47)
Net loss attributable to shareholders of SPI Energy Co., Ltd. from continuing operations	(15,258)	(6,168)	(26,682)
Net loss attributable to shareholders of SPI Energy Co., Ltd. from discontinued operations	—	(6,114)	(64,398)
Net loss attributable to shareholders of SPI Energy Co., Ltd.	\$ (15,258)	\$ (12,282)	\$ (91,080)
Net loss from continuing operations per ordinary share:			

Basic and Diluted	\$ <u>(1.2)</u>	\$ <u>(0.9)</u>	\$ <u>(4)</u>
Net loss from discontinued operations per ordinary share:			
Basic and Diluted	\$ <u>—</u>	\$ <u>(0.8)</u>	\$ <u>(9)</u>
Net loss per ordinary share:			
Basic and Diluted	\$ <u>(1.2)</u>	\$ <u>(1.7)</u>	\$ <u>(13)</u>
Weighted average shares outstanding*			
Basic and Diluted	<u>12,733,062</u>	<u>7,262,023</u>	<u>6,826,633</u>

*The shares are presented on a retroactive basis to reflect the Company's Reverse Stock Splits (Note 20).

The accompanying 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,		
	2019	2018	2017
Loss from continuing operations including noncontrolling interests	\$ (15,148)	\$ (6,137)	\$ (26,514)
Loss from discontinued operations, net of tax	—	(6,122)	(64,445)
Net loss including noncontrolling interests	(15,148)	(12,259)	(90,959)
Other comprehensive loss, net of tax of nil:			
Foreign currency translation losses arising during the year	(591)	(1,381)	(1,196)
Total comprehensive loss including noncontrolling interests	(15,739)	(13,640)	(92,155)
Comprehensive income (loss) attributable to noncontrolling interests	(69)	(117)	55
Comprehensive loss attributable to shareholders of SPI Energy Co., Ltd.	<u>\$ (15,670)</u>	<u>\$ (13,523)</u>	<u>\$ (92,210)</u>

The accompanying notes are an integral part of these consolidated financial statements.

SPIENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF EQUITY (DEFICIT)
(In thousands, except for share and per share data)

	Ordinary Shares		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Equity (deficit) Attributable to Shareholders of SPI Energy Co., Ltd.	Noncontrolling Interests	Total Equity (Deficit)
	Shares*	Amount						
Balances at December 31, 2016	<u>6,416,652</u>	<u>\$ 1</u>	<u>\$ 482,533</u>	<u>\$ (466,764)</u>	<u>\$ (32,744)</u>	<u>\$ (16,974)</u>	<u>\$ 4,046</u>	<u>\$ (12,928)</u>
Net loss	—	—	—	(91,080)	—	(91,080)	121	(90,959)
Foreign currency translation losses	—	—	—	—	(1,130)	(1,130)	(66)	(1,196)
Issuance of ordinary shares	834,020	—	6,641	—	—	6,641	—	6,641
Share-based compensation expense	—	—	798	—	—	798	—	798
Balances at December 31, 2017	<u>7,250,672</u>	<u>\$ 1</u>	<u>\$ 489,972</u>	<u>\$ (557,844)</u>	<u>\$ (33,874)</u>	<u>\$ (101,745)</u>	<u>\$ 4,101</u>	<u>\$ (97,644)</u>
Net loss	—	—	—	(12,282)	—	(12,282)	23	(12,259)
Foreign currency translation losses	—	—	—	—	(1,241)	(1,241)	(140)	(1,381)
Disposition of SPI China (HK) Limited	—	—	107,867	—	—	107,867	7	107,874
Option granted in disposition	—	—	1,260	—	—	1,260	—	1,260
Forgiveness of receivable from SPI China (HK) Limited	—	—	(536)	—	—	(536)	—	(536)
Share-based compensation expense	663,460	—	2,756	—	—	2,756	—	2,756
Reverse stock split rounding shares	(7)	—	—	—	—	—	—	—
Balances at December 31, 2018	<u>7,914,125</u>	<u>\$ 1</u>	<u>\$ 601,319</u>	<u>\$ (570,126)</u>	<u>\$ (35,115)</u>	<u>\$ (3,921)</u>	<u>\$ 3,991</u>	<u>\$ 70</u>
Net loss	—	—	—	(15,258)	—	(15,258)	110	(15,148)
Foreign currency translation losses	—	—	—	—	(412)	(412)	(179)	(591)
Acquisition of noncontrolling interest	—	—	2,278	—	—	2,278	(1,213)	1,065
Forgiveness of payable to SPI China (HK) Limited	—	—	652	—	—	652	—	652
Issuance of ordinary shares	6,600,000	—	7,656	—	—	7,656	—	7,656
Issuance of restricted stock units for services	107,000	—	516	—	—	516	—	516
Share-based compensation expense	—	—	305	—	—	305	—	305
Balances at December 31, 2019	<u>14,621,125</u>	<u>\$ 1</u>	<u>\$ 612,726</u>	<u>\$ (585,384)</u>	<u>\$ (35,527)</u>	<u>\$ (8,184)</u>	<u>\$ 2,709</u>	<u>\$ (5,475)</u>

*The shares are presented on a retroactive basis to reflect the Company's Reserve Stock Splits (Note 20).

SPI ENERGY CO., LTD.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	December 31, 2019	December 31, 2018	December 31, 2017
Cash flows from operating activities:			
Net loss from continuing operations	\$ (15,148)	\$ (6,137)	\$ (26,514)
Net loss from discontinued operations	—	(6,122)	(64,445)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:			
Depreciation	1,981	1,204	1,159
Amortization	278	300	302
Reserve for inventory	103	—	366
Provision (reverse) for doubtful accounts, notes and other receivables	4,115	(501)	1,693
Impairment charges on property, plant and equipment	2,235	—	53
Impairment charges on project assets	2,455	—	687
Loss on investment in affiliates	—	—	2,214
Share-based compensation expense	821	2,726	1,174
Gain on extinguishment of convertible bonds	—	—	(7,121)
Gain on troubled debt restructuring	—	(1,887)	—
Amortization of right-of-use assets	434	—	—
(Reversal) accrual of tax penalty	(6,890)	—	9,670
Amortization of debt discount on convertible bonds	594	1,910	2,906
Change in fair value of derivative liability	(285)	—	—
Deferred income tax benefit	(85)	(83)	(247)
Gain on disposal of property and equipment	(45)	—	—
Loss on disposal of subsidiaries	385	—	—
Changes in operating assets and liabilities			
Accounts receivable	3,087	(13,898)	(8,974)
Amount due from related parties	538	(451)	(470)
Notes receivable	4,823	526	525
Costs and estimated earnings in excess of billings on uncompleted contracts	—	—	266
Project assets	3,333	17,834	(3,957)
Inventories	(1,958)	2,876	(6,733)
Prepaid expenses and other assets	(497)	906	164
Accounts payable	7,805	3,353	(297)
Advances from customers	(8,352)	(5,092)	13,700
Income taxes payable	268	226	(146)
Accrued liabilities and other liabilities	1,264	3,960	5,207
Lease liability	(421)	—	—
Bitcoin mining, net of mining pool operating fees	(3,630)	—	—
Amount due to related parties	(79)	79	—
Net cash provided by (used in) provided by operating activities, continuing operations	(2,871)	7,851	(14,373)

Net cash provided by operating activities, discontinued operations	—	159	2,733
Cash flows from investing activities:			
Proceeds from disposal of subsidiaries	4,549	—	—
Proceeds from sale of bitcoins	3,630	—	—
Acquisitions of Solar PV systems	(8,345)	—	—
Acquisitions of property, plant and equipment	(4,762)	(95)	(298)
Proceeds from disposal of property, plant and equipment	166	6	—
Prepayment of purchase of land	(3,132)	—	—
Acquisitions of subsidiaries, net of cash acquired	—	—	43
Decrease of cash due to deconsolidation of Sinsin	—	—	(2,679)
Decrease of cash due to disposition of SPI China (Note 4 (1))	—	(3,257)	—
Net cash used in investing activities, continued operations	(7,894)	(3,346)	(2,934)
Net cash used in investing activities, discontinued operations	—	(418)	(352)
Cash flows from financing activities:			
Proceeds from issuance of ordinary shares	7,656	—	5,760
Net payment for purchasing minority interests	(75)	—	—
Proceeds from issuance of convertible note	1,250	—	—
Proceeds from line of credit and loans payable	84,308	66,169	31,925
Repayments of line of credit and loans payable	(83,619)	(67,754)	(29,401)
Net cash provided by (used in) financing activities, continued operations	9,520	(1,585)	8,284
Net cash used in financing activities, discontinued operations	—	(2,145)	(2,488)
Effect of exchange rate changes on cash	(351)	453	(477)
(Decrease) increase in cash, cash equivalents and restricted cash	(1,596)	969	(9,607)
Cash, cash equivalents and restricted cash at beginning of year	4,599	3,630	13,237
Cash, cash equivalents and restricted cash at end of year	3,003	4,599	3,630
Less: cash and cash equivalents of discontinued operations at end of year	—	—	(1,356)
Cash and cash equivalents at end of year for continuing operations	<u>\$ 3,003</u>	<u>\$ 4,599</u>	<u>\$ 2,274</u>
Reconciliation of cash, cash equivalents, and restricted cash to the consolidated balance sheets			
Cash and cash equivalents	2,764	4,141	2,238
Restricted cash	239	458	36
Total cash, cash equivalents, and restricted cash	<u>\$ 3,003</u>	<u>\$ 4,599</u>	<u>\$ 2,274</u>
Supplemental cash flow information:			
Interest paid	\$ 645	\$ 725	\$ 566
Income tax paid	\$ —	\$ —	\$ 347
Non-cash activities:			
Netting off balance due to/from third party	\$ 2,109	\$ 5,003	\$ 6,917

Right of use assets obtained in exchange for operating lease obligations	\$	2,419	\$	—	\$	—
Forgiveness of loan by minority interest holders	\$	1,140	\$	—	\$	—
Interest capitalized to project assets	\$	—	\$	292	\$	1,607
Loss on forgiveness of debt due from SPI China (Note 4(1))	\$	653	\$	536	\$	—
Options issued to shareholder during disposition of SPI China (Note 4(1))	\$	—	\$	1,260	\$	—
Forgiveness of debt due to (due from) SPI China (Note 29 and Note 4(1))	\$	—	\$	107,867	\$	—
Derecognition of Project Aerojet	\$	—	\$	—	\$	754

The accompanying notes are an integral part of these consolidated financial statements.

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”), its subsidiaries and consolidated variable interest entities (“VIEs”) (collectively the “Group”) is a provider of photovoltaic (“PV”) 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.

Since 2018, the Company engages in the sale of bitcoin mining equipment, provides hosting services and mines bitcoins. In 2019, the Company also sells hays from United States to China.

Organization

The Company was incorporated in the Cayman Islands on May 4, 2015 for the sole purpose of effectuating the redomicile of the Company’s predecessor, Solar Power, Inc., a California corporation (“SPI California”). The redomicile was approved by the shareholders of SPI California on May 11, 2015, pursuant to which one share of common stock of SPI California held by the shareholders was converted into one SPI Energy’s ordinary share. On January 4, 2016, SPI California completed the redomicile, resulting in SPI Energy becoming the publicly held parent company of SPI California. SPI Energy’s shares then began quotation on the Open Transparent Connected Markets under the symbol “SRGYY” effective January 4, 2016. On January 19, 2016, SPI Energy’s shares were listed on the Nasdaq Global Select Market and traded under the symbol “SPI”.

The major subsidiaries of the Company as of December 31, 2019 are summarized as below:

Major Subsidiaries	Abbreviation	Location
SPI Renewables Energy (Luxembourg) Private Limited Company S.a.r.l. (formerly known as CECEP Solar Energy (Luxembourg) Private Limited Company (S.a.r.l.)) and Italsolar S.r.l.	CECEP	Luxembourg, Italy
Solar Juice Pty Ltd.	Solar Juice	Australia
Solar Juice USA Inc.	Solar Juice US	United States
Solar Juice (HK) Limited	Solar Juice HK	Hong Kong
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
Heliostixio S.A.	Heliostixio	Greece
Heliohrisi S.A.	Heliohrisi	Greece
Thermi Sun S.A.	Thermi Sun	Greece
Knight Holding Corporation	Knight	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 on the carrying amount of \$69,606 as of December 31, 2019 and 2018. Both the Group and the former shareholders, 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. As of the issuance of the financial statements, the lawsuit with Sinsin is still on the proceeding, and it is uncertain how the court will rule (See Note 26(b) Contingencies).

On December 10, 2018, the Group disposed SPI China (HK) Limited (“SPI China”), which holds all of the Group’s assets and liabilities related to its business in China, including engineering, procurement and construction (“EPC”) business, PV projects, Internet finance lease related business and E-commerce in China, to Lighting Charm Limited (“Lighting Charm”), an affiliate of Ms. Shan Zhou, the spouse of Xiaofeng Peng, the Group’s Chairman of the Board of Directors and Chief Executive Officer (see Note 4 (1) Disposition of SPI China). The Group effected an internal restructuring following which SPI China would only hold the Group’s subsidiaries in China, and all the other subsidiaries outside of China would be transferred to the Group (the “restructuring”). As of December 10, 2018, the restructuring was completed and the disposal transaction was closed (see Note 4 (1) Disposition of SPI China).

Variable Interest Entities

Current PRC laws and regulations impose certain restrictions or prohibitions on foreign ownership of companies that engage in value-added telecommunication services, and certain other business. The Group conducted its business in China through a series of contractual agreements before December 10, 2018. On December 10, 2018, the Group disposed SPI China, its PRC subsidiaries and the variable interest entities.

The Group operated its on-line fund raising and leasing business and its on-line solar products trading through Shanghai Meijv Network Technology Co., Ltd. (“Meijv”) and Lv Neng Tao E-Commerce (Suzhou) Co., Ltd. (“Lv Neng Tao”) (collectively referred to as the “VIEs”) respectively. Both Meijv and Lv Neng Tao were limited liability companies established in the PRC and held the requisite licenses and permits necessary to conduct the on-line businesses, which were restricted from foreign investment in accordance with the relevant PRC laws and regulations. Meijv was established by Shanghai Youying E-commerce Co., Ltd. (“Youying”) on June 12, 2015. Lv Neng Tao was established on June 17, 2015 by Mr. Min Xiahou, the former deputy chairman of the Company’s board of directors, Mr. Minghua Zhao, a former director of the Group and Mr. Tairan Guo, the Group’s former Chief Financial Officer. These individuals acted as nominee equity holders of Lv Neng Tao on behalf of the Company. On March 17, 2016, Meijv entered into a series of contractual arrangements with Yanhua Network Technology (Shanghai) Co., Ltd. (“Yanhua Network”) and Youying, including exclusive call option agreement, proxy voting agreement, exclusive business cooperation agreement and equity interest pledge agreement (collectively, the “Meijv VIE Agreements”). On January 1, 2016, Lv Neng Tao entered into a series of contractual arrangements with Yanhua Network and its legal shareholders, including exclusive call option agreement, proxy voting agreement, exclusive business cooperation agreement and equity interest pledge agreement (collectively, the “Lv Neng Tao VIE Agreements”, and together with Meijv VIE Agreements, the “VIE Agreements”).

Pursuant to the VIE Agreements, Youying and Lv Neng Tao’s legal shareholders had granted all of their legal rights in Meijv and Lv Neng Tao, respectively, including voting rights and deposition rights, to Yanhua Network. As a result, Youying and Lv Neng Tao’s legal shareholders did not have the direct or indirect ability through voting rights or similar rights to make decision about the activities of Meijv and Lv Neng Tao, respectively, that had a significant effect on the success of Meijv and Lv Neng Tao. The Company, through Yanhua Network, had obtained a financial controlling interest of Meijv and Lv Neng Tao which enable it to have (1) the power to direct the activities that most significantly affected the economic performance of Meijv and Lv Neng Tao, and (2) the right to receive benefits or have the obligation to absorb losses and to receive the expected residual return of Meijv and Lv Neng Tao that could potentially be significant to Meijv and Lv Neng Tao. Accordingly, the Company, through Yanhua Network, was considered the primary beneficiary of Meijv and Lv Neng Tao. As such, the financial results of Meijv and Lv Neng Tao were included in the Company’s consolidated financial statements as of December 31, 2017 and 2016, and December 10, 2018. Prior to the signing of Meijv VIE Agreements on March 17, 2016 and Lv Neng Tao VIE Agreements on January 2016, Meijv and Lv Neng Tao had not carried out any business except for the holding the business licenses and permits necessary to conduct the on-line businesses in the PRC. With the disposition of SPI China, all VIEs were disposed as of December 10, 2018 (see Note 4 (1) Disposition of SPI China).

2. Going Concern

The Group has suffered recurring losses from operations. The Group has incurred a net loss of \$15,148 during the year ended December 31, 2019, and the cash flow used in operating activities was \$2,871. As of December 31, 2019, the Group had a working capital deficit of \$113,528 and accumulated deficit of \$585,384. Additionally, the Group has defaulted the repayment of convertible bonds of \$35,000 since 2016, and another convertible bond of \$20,000 would be fully due in 2020. As of December 31, 2019, \$55,907 of convertible bonds is payable within one year.

These and other factors disclosed in these financial statements raise substantial doubt as to the Group's ability to continue as a going concern. Management believes that it has developed a liquidity plan, as summarized below, that, if executed successfully, will provide sufficient liquidity to meet the Group's obligations for a reasonable period of time.

Working Capital management

The Group plans to implement certain measures with an aim to reduce its operating costs in 2020, which has considered the impact of Coronavirus 2019 as disclosed in Note 30 to the consolidated financial statements. Such measures include: 1) strict controlling and reducing business, marketing and advertising expenses in United States and Australia; 2) lowering the remuneration of the Group's management team; 3) implementing comprehensive budget control, and other measures.

Cost Saving Measures

The Group plans to implement certain measures with an aim to reduce its operating costs in 2020, which has considered the impact of Coronavirus 2019 as disclosed in Note 30 to the consolidated financial statements. Such measures include: 1) strict controlling and reducing business, marketing and advertising expenses in United States and Australia; 2) lowering the remuneration of the Group's management team, which has considered the impact of Coronavirus 2019 as disclosed in Note 30 to the consolidated financial statements. 3) implementing comprehensive budget control, etc.

While management believes that the measures in the liquidity plan will be adequate to allow the Group to meet its liquidity and cash flow requirements within one year after the date that the financial statements are issued, there is no assurance that the liquidity plan will be successfully implemented. Failure to successfully implement the liquidity plan will have a material adverse effect on the Group's business, results of operations and financial position, 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.

3. Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying consolidated financial statements of the Group are prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP").

The accompanying 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.

(b) Principles of Consolidation

The consolidated financial statements include the financial statements of the Company, and its subsidiaries. All material inter-company transactions and balances have been eliminated upon consolidation. For consolidated subsidiaries where the Company's ownership in the subsidiary is less than 100%, the equity interest not held by the Group is shown as noncontrolling interests. The Company accounts for investments over which it has significant influence but not a controlling financial interest using the equity method of accounting. The Company deconsolidates a subsidiary when the Company 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.

(c) 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 Company's consolidated financial statements include the allowance made for doubtful accounts receivable and other receivable, inventory write-downs, the estimated useful lives of long-lived assets, the impairment of goodwill, long-lived assets and project assets, fair value of derivative liability, valuation allowance of deferred tax assets, accrued warranty expenses, the grant-date fair value of share-based compensation awards and related forfeiture rates, the lease discount rate, and fair value of financial instruments and assumptions related to the consolidation of entities in which the Company holds variable interests. 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.

(d) Foreign Currency Translation and Foreign Currency Risk

The functional currency of the Company and subsidiaries located in the United States is the United States dollar ("US\$" or "\$"). The functional currency of the Company's subsidiaries located in the PRC, Europe, United Kingdom, Japan and Australia are Renminbi ("RMB"), EURO ("EUR"), British Pounds ("GBP"), Japanese Yen ("JPY") 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.

(e) Fair Value of Financial Instruments

The Group estimates fair value of financial assets and liabilities as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) on the measurement date in an orderly transaction between market participants. The fair value measurement guidance establishes a three-level fair value hierarchy that prioritizes the inputs into the valuation techniques used to measure fair value.

- Level 1 — Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.
- Level 2 — Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active.

Also, model-derived valuations in which all significant inputs and significant value drivers are observable in active markets are Level 2 valuation techniques.

Y Level 3 — Valuation techniques in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are valuation technique inputs that reflect the Group's own assumptions about the assumptions that market participants would use to price an asset or liability.

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.

(f) 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 Company 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 Company adopted Accounting Standard Update ("ASU") 2017-01 "Business Combination (Topic 805): Clarifying the Definition of a Business" on January 1, 2018 and applied the new definition of a business prospectively for acquisitions made subsequent to December 31, 2017. Upon the adoption of ASU 2017-01, a new screen test is introduced to evaluate 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.

(g) Asset Acquisition

When the Company 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 Company'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 measureable. 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.

(h) 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, 2019 and 2018.

(i) Restricted Cash

Restricted cash represent bank deposits with designated use, which cannot be withdraw without certain approval or notice. Restricted cash, which matures twelve months after the balance sheet date, is classified as noncurrent assets in the consolidated balance sheets.

At December 31, 2019 and 2018, the Group had restricted bank deposits of \$239 and \$458, respectively. The balance as of December 31, 2019 and 2018 mainly represented the restricted bank deposits in the bank account established for the sole purpose of paying the obligations and making other payments related to the project assets development in Hawaii of SPI Solar Inc., a subsidiary of the Group.

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(j) Accounts Receivable, net

The Group grants open credit terms to credit-worthy customers. Accounts receivable are primarily related to the Group's sales of pre-development solar projects and sales of PV components. For pre-development sales contracts, the payment is typically due in installments over the contract term, which are both before and after the performance by the Company. Payment for sales of PV components and electricity revenue with power purchase agreements ("PPAs") are typically due in full within 30 to 90 days of shipping of the products or the start of the contract term.

The Group maintains allowances for doubtful accounts. The Group regularly monitors and assesses the risk of not collecting amounts owed by customers. This evaluation is based upon a variety of factors, including an analysis of amounts current and past due along with relevant history and facts particular to the customer. 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.

(k) Notes Receivable

Notes receivable was a 12-year interest-bearing promissory note issued by an EPC customer in 2015. The promissory note carries interests at 6% per annum and is settled by pre-determined installments. Installment payments that fall due within 12 months and over 12 months after the balance sheet date are classified as current assets and noncurrent assets respectively on the consolidated balance sheet. Notes receivable was fully collected during the year ended December 31, 2019. As of December 31, 2018, no allowance was made against the notes receivable.

(l) Inventories, net

Inventories are carried at the lower of cost or net realizable value, determined by the weighted average cost method. Provisions are made for obsolete or slow-moving inventories based on management estimates. Inventories are written down based on the difference between the cost of inventories and the net realizable value based upon estimates about future demand from customers, specific customer requirements on certain projects and other factors. Inventory provision charges establish a new cost basis for inventory that subsequently cannot be marked up based on changes in underlying facts and circumstances.

(m) Project Assets, net

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, plant 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 operating income in the consolidated statement of operations. The solar systems held for use within "property, plant 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 sales 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, plant 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 operating income or expense in the consolidated statement of operation.

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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 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.

(n) Property, Plant and Equipment, net

The Group accounts for its property, plant and equipment at cost, less accumulated depreciation. 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:

Plant and machinery	5 or 6.67 years
Furniture, fixtures and equipment	3 or 5 years
Computers	3 or 5 years
Automobile	3 or 5 years
Bitcoin mining equipment	3 years
Leasehold improvements	The shorter of the estimated life or the lease term
PV solar system	17, 20, 25 or 27 years

(o) Intangible Assets other than Goodwill

Intangible assets consist of customer relationships and patents. 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, plant and equipment, project 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 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 operations would be recognized.

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(q) Bitcoins

Bitcoins are awarded to the Company through its mining activities which are accounted for in connection with the Company's revenue recognition policy.

Bitcoins held are accounted for as intangible assets with indefinite useful lives. An intangible asset with an indefinite useful life is not amortized but assessed for impairment annually, or more frequently, when events or changes in circumstances occur indicating that it is more likely than not that the indefinite-lived asset is impaired. Impairment exists when the carrying amount exceeds its fair value, which is measured using the quoted price of the bitcoins at the time its fair value is being measured. In testing for impairment, the Company has the option to first perform a qualitative assessment to determine whether it is more likely than not that an impairment exists. If it is determined that it is not more likely than not that an impairment exists, a quantitative impairment test is not necessary. If the Company concludes otherwise, it is required to perform a quantitative impairment test. To the extent an impairment loss is recognized, the loss establishes the new cost basis of the asset. Subsequent reversal of impairment losses is not permitted. The balance of bitcoins was nil as of December 31, 2019 and 2018.

Bitcoins awarded to the Company through its mining activities are included within operating activities on the accompanying consolidated statements of cash flows. The sales of bitcoins are included within investing activities in the accompanying consolidated statements of cash flows and any realized gains or losses from such sales are included in other income (expense) in the consolidated statements of operations. The Company accounts for its gains or losses in accordance with the first in first out (FIFO) method of accounting.

(r) 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 Company'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 Company has an option to first assess qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. In the qualitative assessment, the Company 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 two-step quantitative impairment test, the first step 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 and the second step will not be required. If the carrying amount of a reporting unit exceeds its fair value, the second step compares the implied fair value of goodwill to the carrying value of a reporting unit's goodwill. The implied fair value of goodwill is determined in a manner similar to accounting for a business combination with the allocation of the assessed fair value determined in the first step to the assets and liabilities of the reporting unit. The excess of the fair value of the reporting unit over the amounts assigned to the assets and liabilities is the implied fair value of goodwill. This allocation process is only performed for the purposes of evaluating goodwill impairment and does not result in an entry to adjust the value of any assets or liabilities. 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.

(s) Product Warranties

The Group offers the industry standard warranty up to 25 years for PV modules and industry standard warranty for five to ten years on inverter and balance of system components. Due to the warranty period, the Group bears the risk of extensive warranty claims long after products have been shipped and revenues have been recognized. The Group provides a limited warranty to the original purchasers of its solar modules, inverters and cables for trading business for one to five years, in relation to defects in materials and workmanship. For the Group's cable, wire and mechanical assemblies business, historically the related warranty claims have not been material. For the Group's solar PV business, the greatest warranty exposure is in the form of product replacement.

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During the quarter ended September 30, 2007 and continuing through the fourth quarter of 2010, the Group installed own manufactured solar panels and accrued warranty based on the Group's own historical data. Since 2011, due to the absence of historical material warranty claims and identical warranty terms, the Group has not recorded any additional warranty provision relating to solar energy systems sold. PV construction contracts entered into during the recent years included provisions under which the Group agreed to provide warranties to the customers. The warranty the Group offers to its customers is identical to the warranty offered to the Group by its suppliers, therefore, the Group passes on all potential warranty exposure and claims, if any, with respect systems sold by the Group to its suppliers.

(t) 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 Company 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, 2019, 2018 and 2017.

(u) Revenue Recognition

On January 1, 2018, the Group adopted Accounting Standards Codification ("ASC") No. 606, "Revenue from Contracts with Customers" ("ASC 606" or "Topic 606") and applied the modified retrospective method to all contracts that were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Group's historical accounting practices under ASC Topic 605 "Revenue Recognition".

The Group has determined that the impact of the transition to the new standard is immaterial to the Group's revenue recognition model. Accordingly, the Group has not made any adjustment to opening retained earnings.

The Group's accounting practices under ASC Topic 606 are as followings:

The Company generates revenue from sales of PV components, electricity revenue with Power Purchase Agreements ("PPAs"), sales of PV project assets, bitcoin mining equipment sales and hosting service, sales of pre-development solar projects, revenue from bitcoin mining and sales of hays for the years ended December 31 2019, 2018 and 2017.

Sale of PV components

Revenue on sale of PV components 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.

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.

Bitcoin mining equipment sales and hosting service

Revenue on sale of bitcoin mining equipment is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon delivery of the products to the hosting site or receipt place assigned by the customer, installation and setting up the products. Revenue for hosting service is recognized over time as services are performed and based on the output method related to the time incurred during the service period.

Sales of pre-development solar projects

For sales of pre-development solar projects in which the Group transfers 100% of the membership interest in solar projects to a customer, the Group recognizes all of the revenue for the consideration received at a point in time when the membership interest was transferred to the customer, which typically occurs when the Group delivered the membership interest assignment agreement to the customer.

The contract arrangements may contain provisions that can either increase or decrease the transaction price. These variable amounts generally are resolved upon achievement of certain performance or upon occurrence of certain price reduction conditions. Variable consideration is estimated at each measurement date at its most likely amount to the extent that it is probable that a significant reversal of cumulative revenue recognized will not occur and true-ups are applied prospectively as such estimates change.

Changes in estimates for sales of pre-development solar projects occur for a variety of reasons, including but not limited to (i) EPC construction plan accelerations or delays, (ii) product cost forecast changes, (iii) change orders, or (iv) occurrence of purchase price reduction conditions. The cumulative effect of revisions to transaction prices are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated.

Revenue from bitcoin mining

The Company has entered into a digital asset mining pool to provide computing power to the mining pool. Providing computing power in crypto asset transaction verification services is an output of the Company's ordinary activities. The provision of computing power is the only performance obligation in the Company's contracts with the mining pool. The transaction consideration the Company receives, if any, is noncash consideration, which the Company measures at fair value on the date of receipt, which is not materially different than the fair value at contract inception or the time the Company has earned the award from the mining pool. The consideration is all variable. Because it is not probable that a significant reversal of cumulative revenue will not occur, the consideration is constrained until the Company receives the consideration, at which time revenue is recognized. There is no significant financing component in these transactions.

Fair value of the digital asset award received is determined using the average U.S. dollar spot rate of the related digital currency at the time of receipt.

Sale of Alfalfa hays

In 2019, the Company sells alfalfa hays from United States to China. Revenue on sale of alfalfa hays is recognized at a point in time following the transfer of control of such products to the customer, which typically occurs upon the acceptance of the products made by the customer.

Disaggregation of revenues

The following table illustrates the disaggregation of revenue by revenue stream from continuing operations for the years ended December 31, 2019, 2018 and 2017:

<u>By revenue stream</u>		<u>For the year ended December 31, 2019</u>							
<u>Continued operations</u>	<u>Sales of PV components</u>	<u>Electricity revenue with PPAs</u>	<u>Sales of PV project asset</u>	<u>Bitcoin mining equipment sales and hosting service</u>	<u>Sales of pre-development solar projects</u>	<u>Bitcoin mining</u>	<u>Sales of hays</u>	<u>Others</u>	<u>Total</u>
Australia	\$ 79,470	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1,048	\$ 80,518
Japan	—	—	9,563	—	—	—	—	—	9,563
Italy	—	1,365	—	—	—	—	—	—	1,365
United States	1,471	—	—	567	(2,835)	3,630	1,487	—	4,320
United Kingdom	—	979	—	—	—	—	—	—	979
Greece	—	1,024	—	—	—	—	—	114	1,138
Total	<u>\$ 80,941</u>	<u>\$ 3,368</u>	<u>\$ 9,563</u>	<u>\$ 567</u>	<u>\$ (2,835)</u>	<u>\$ 3,630</u>	<u>\$ 1,487</u>	<u>\$ 1,162</u>	<u>\$ 97,883</u>

<u>By revenue stream</u>		<u>For the year ended December 31, 2018</u>							
<u>Continued operations</u>	<u>Sales of PV components</u>	<u>Electricity revenue with PPAs</u>	<u>Sales of PV project asset</u>	<u>Bitcoin mining equipment sales and hosting service</u>	<u>Sales of pre-development solar projects</u>	<u>Bitcoin mining</u>	<u>Sales of hays</u>	<u>Others</u>	<u>Total</u>
Australia	\$ 90,067	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 1,314	\$ 91,381
Japan	1,605	—	10,809	—	—	—	—	23	12,437
Italy	—	1,733	—	—	—	—	—	—	1,733
United States	1,875	—	—	1,052	15,794	—	—	—	18,721
United Kingdom	—	932	—	—	—	—	—	—	932
Greece	—	378	—	—	—	—	—	—	378
Total	<u>\$ 93,547</u>	<u>\$ 3,043</u>	<u>\$ 10,809</u>	<u>\$ 1,052</u>	<u>\$ 15,794</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 1,337</u>	<u>\$ 125,582</u>

<u>By revenue stream</u>		<u>For the year ended December 31, 2017</u>							
<u>Continued operations</u>	<u>Sales of PV components</u>	<u>Electricity revenue with PPAs</u>	<u>Sales of PV project asset</u>	<u>Bitcoin mining equipment sales and hosting service</u>	<u>Sales of pre-development solar projects</u>	<u>Bitcoin mining</u>	<u>Sales of hays</u>	<u>Others</u>	<u>Total</u>
Australia	\$ 111,284	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 890	\$ 112,174
Japan	511	—	—	—	—	—	—	—	511
Italy	—	1,932	—	—	—	—	—	—	1,932
United States	—	—	—	—	—	—	—	—	—
United Kingdom	—	861	6,042	—	—	—	—	—	6,903
Greece	—	—	—	—	—	—	—	—	—
Total	<u>\$ 111,795</u>	<u>\$ 2,793</u>	<u>\$ 6,042</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 890</u>	<u>\$ 121,520</u>

Contract balance

The following table provides information about accounts receivables and contract liabilities from contracts with customers:

	December 31, 2019	December 31, 2018
Accounts receivable, current and noncurrent	\$ 16,539	\$ 27,777
Advance from customers	\$ 17,632	\$ 25,984

Advance from customers, which represent a contract liability, represent mostly unrecognized amount received for customers. Advance from customers is recognized as (or when) the Group performs under the contract. During the year ended December 31, 2019, 2018 and 2017, the Group recognized \$8,159, \$11,365 and \$326 that was included in the balance of advance from customers at January 1, 2019, 2018 and 2017, respectively.

(v) Cost of Revenues

Cost of revenues for PV components is mainly from direct purchase price of PV components. Cost of revenues for PV project assets and pre-development solar projects 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 revenues for bitcoin mining equipment and hosting service include direct purchase of mining equipment, electricity fee and other indirect expense. Costs of electricity generation revenue include depreciation of solar power project assets and costs associated with operation and maintenance of the project assets. Costs of bitcoin mining include depreciation of bitcoin miners and hosting service fee. Cost of sales of hays is mainly the purchase price of raw materials.

(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 issued. 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, which is generally the vesting period.

(x) Derivative Instruments

The Company 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) Capitalized Interest

The Group's policy is to capitalize interest cost incurred on debt during the construction of major projects exceeding three months. A reconciliation of total interest cost to "Interest Expense" as reported in the consolidated statements of operations for the years ended December 31, 2019, 2018 and 2017 is as follows:

For the years ended December 31,		
2019	2018	2017

Interest cost capitalized	\$	—	\$	292	\$	1,607
Interest cost charged to expense		<u>3,923</u>		<u>6,665</u>		<u>8,087</u>
Total interest cost	\$	<u><u>3,923</u></u>	\$	<u><u>6,957</u></u>	\$	<u><u>9,694</u></u>

(z) Gain on Troubled Debt Restructuring

The Group accounted the debt amendment as a troubled debt restructuring when the transaction meets the two criteria: 1) The Group was experiencing financial difficulties; 2) the lender was granting a concession when the effective borrowing rate on the restructured debt is less than the effective borrowing on the original debt. The difference between future undiscounted cash flows and the net carrying value of the original debt is recognized as gain on troubled debt restructuring, and the carrying value of the debt is adjusted to the future undiscounted cash flow amount.

(aa) Segment Reporting

Operating segments are defined as components of a company 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 is the Chairman, Mr. Peng. Based on the financial information presented to and reviewed by the chief operating decision maker, the Group has determined that it has a single operating and reporting segment for the years ended December 31, 2019, 2018 and 2017.

(ab) 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. Potentially dilutive shares are excluded from the computation if their effect is anti-dilutive.

(ac) Comprehensive Loss

U.S. GAAP generally requires that recognized revenue, expenses, gains and losses be included in net income or loss. Although certain changes in assets and liabilities are reported as separate components of the equity section of the consolidated balance sheet, such items, along with net income, are components of comprehensive income or loss. The components of other comprehensive income or loss consist solely of foreign currency translation adjustments.

(ad) 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.

(ae) Leases

In February 2016, the FASB issued ASU 2016-12, Leases (ASC Topic 842), which amends the leases requirements in ASC Topic 840, Leases. Under the new lease accounting standard, a lessee will be required to recognize a right-of-use asset and lease liability for most leases on the balance sheet. The new standard also modifies the classification criteria and accounting for sales-type and direct financing leases, and enhances the disclosure requirements. Leases will continue to be classified as either finance or operating leases.

The Group adopted ASC Topic 842 using the modified retrospective transition method effective January 1, 2019. There was no cumulative effect of initially applying ASC Topic 842 that required an adjustment to the opening retained earnings on the adoption date nor revision of the balances in comparative periods. As a result of the adoption, the

Group recognized a lease liability and right-of-use asset for each of the existing lease arrangement. The adoption of the new lease standard does not have a material impact on the consolidated statements of operations or the consolidated statements of cash flows.

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.

Lease assets and liabilities are recognized at the present value of the future lease payments at the lease commencement date. 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 lease assets and liabilities.

(af) Recent Accounting Pronouncements

Recently Adopted Accounting Standards

In May 2014, the Financial Accounting Standards Board (FASB) issued Topic 606, which supersedes the revenue recognition requirements in Topic 605. The Group adopted Topic 606 as of January 1, 2018 using the modified retrospective transition method applied to those contracts which were not completed as of January 1, 2018. See Note 3(u) "Revenue Recognition" above for further details.

In February 2016, the FASB issued ASU 2016-12, Leases (ASC Topic 842), which amends the leases requirements in ASC Topic 840, Leases. The Group adopted ASC Topic 842 using the modified retrospective transition method effective January 1, 2019. There was no cumulative effect of initially applying ASC Topic 842 that required an adjustment to the opening retained earnings on the adoption date nor revision of the balances in comparative periods. See Note 3(ae) "Leases" above for further details.

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): "Restricted Cash" ("ASU 2016-18"). ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. This update is effective in fiscal years, including interim periods, beginning after December 15, 2017 and early adoption is permitted. The adoption of this guidance will result in the inclusion of the restricted cash balances within the overall cash balance and removal of the changes in restricted cash activity, as a result, the Company no longer presents transfers between cash and cash equivalents and restricted cash in the statement of cash flows. Furthermore, an additional reconciliation will be required to reconcile cash, cash equivalents, and restricted cash reported within the consolidated balance sheets to sum to the total shown in the consolidated statement of cash flows. The Group has already disclosed the restricted cash separately on its consolidated balance sheets. Beginning January 1, 2018, the Group has adopted and included the restricted cash balances on the consolidated statement of cash flows and reconciliation of cash, cash equivalent, and restricted cash within its consolidated statements of balance sheet and consolidated statement of cash flows. This guidance has been applied retrospectively to the consolidated statement of cash flows for the year ended December 31, 2017, which required the Company to recast each prior reporting period presented.

In January 2017, the FASB issued AUS No. 2017-01, "Business Combination (Topic 805): Clarifying the Definition of a Business". The Group adopted it on January 1, 2018 and applied the new definition of a business prospectively for acquisitions made subsequent to December 31, 2017. See Note 3 (f) "Business Acquisition" above for further details.

Accounting Pronouncements Issued But Not Yet Adopted

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820)-Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement. ASU 2018-13 removes the amounts and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy and the valuation processes for Level 3 fair value measurements; modifies certain disclosure requirements in Topic 820; and require additional disclosures such as the range and weighted average of significant unobservable inputs used to develop Level 3 measurements etc. ASU No. 2018-13 is effective for the Company beginning in the first quarter of fiscal year 2020. The Company does not expect this guidance will have a material impact on its consolidated financial statements.

On December 18, 2019, the FASB issued ASU No. 2019-12, Income taxes (Topic 740), Simplifying the Accounting for Income Taxes. This guidance amends ASC Topic 740 and addresses several aspects including 1) evaluation of step-up tax basis of goodwill when there is not a business combination, 2) policy election to not allocate consolidated taxes on a separate entity basis to entities not subject to income tax, 3) accounting for tax law changes or rates during interim periods, 4) ownership changes from equity method investment to subsidiary or vice versa, 5) elimination of exception to intraperiod allocation when there is gain in discontinued operations and a loss from continuing operations, 6) treatment of franchise taxes that are partially based on income. The guidance is effective for calendar year-end public entities on January 1, 2021 and other entities on January 1, 2022. The Company is evaluating the impact of this guidance on its consolidated financial statements.

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 financial position, statements of operations and cash flows.

4. Disposition

(1) Disposition of SPI China

On August 30, 2018, the Group entered into a share purchase agreement (the “SPI China disposal agreement”) with Lighting Charm, an affiliate of Ms. Shan Zhou, the spouse of Xiaofeng Peng, the Group’s Chairman of the Board of Directors and Chief Executive Officer. Ms. Shan Zhou, as the beneficial owner of the Group, hold more than 10% equity interest of the Group on December 10, 2018. The agreement has been approved by an independent committee of the Group’s Board of Directors. The SPI China disposal agreement provides that the Group sold Lighting Charm the 100% equity interest of SPI China, which holds all of the Group’s assets and liabilities related to its business in China (the “Acquired Business”). The Group effected an internal restructuring following which SPI China would only hold the Group’s subsidiaries in China, and all the other subsidiaries outside of China would be transferred to the Group. Pursuant to the terms of the SPI China disposal agreement, the consideration for the Acquired Business to be paid by the Lighting Charm to the Group in cash was US\$1.00. As of December 10, 2018, the restructuring was completed and the disposition was closed. As a result of the disposition to a principal shareholder for US\$1.00, the excess of SPI China’s book value of liabilities over the book value of its assets was recorded as an addition to paid-in capital of \$107,867.

Together with the transaction, the Group granted Lighting Charm 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 US\$ 3.80 per share. The options vested immediately and can be exercised at any time on or prior to August 21, 2021. The options were valued using the Binomial option pricing model and the fair value of the options on the grant date was \$1,260, which adjusted to the fair value of disposal consideration and was charged into additional paid-in capital.

The Group had made payment on behalf of SPI China for its operation purpose from December 10, 2018 to December 31, 2018, which was considered remote collectability due to the financial position of SPI China, and the Company recorded the amount due from SPI China as a debt forgiveness loss from related parties, with amount of \$536 recorded as a reduction of paid-in capital.

The following are revenues and loss from discontinued operations:

	For the years ended December 31,		
	2019	2018	2017
Net sales	\$ —	4,681	5,945
Cost of revenue	—	2,027	6,235
Gross profit (loss)	—	2,654	(290)
General and administrative	—	2,904	8,391
Sales, marketing and customer service	—	887	4,796
Provision for doubtful accounts, notes and other receivable	—	195	7,485
Impairment charges on goodwill and intangible assets	—	—	205
Impairment charges on property, plant and equipment	—	—	3,755
Impairment charges on project assets	—	—	3,354
Impairment charges on finance lease receivable	—	—	23,967
Total operating expense	—	3,986	51,953
Total other expense, net	—	(4,790)	(12,188)
Loss from discontinued operations before income tax	—	(6,122)	(64,431)
Income tax expense	—	—	14
Loss from discontinued operations, net of income tax	\$ —	(6,122)	(64,445)

(2) Disposition of Italy Subsidiaries

On September 23, 2019, the Company entered into a sale and purchase agreement with a third party buyer, Theia Investments (Italy) S.r.l. (“Theia”), to sell all the shares it held in SUN ROOF II S.r.l. (“SR II”) and SUN ROOF V S.r.l. (“SR V”) for a consideration of \$2,802 and \$2,014, respectively.

SR II and SR V are two limited liabilities companies established under the Italian law in 2011, which own 3 PV plants for a total of 1.8MW peak capacity and 1 PV plant of 0.9MW peak capacity, respectively. The sale of both SR II and SR V were completed on September 26, 2019. The Company derecognized all the assets, liabilities and equity components of SR II and SR V and recognized a loss of \$481 on disposal of SR II and a gain of \$96 on disposal of SR V which are included in other income (expense) – others in the consolidated statements of operations.

5. Acquisitions

On September 20, 2017, the Group entered into a Framework Share Purchase Agreement with Thermi Taneo Venture Capital Fund (“Thermi”) to expand the Company’s business in Europe and also to settle the Group’s EPC receivable from Thermi. Pursuant to the Framework Share Purchase Agreement, the Group agreed to purchase 100% equity interest in Heliohrisi S.A. (“Heliohrisi”), Heliostixio S.A. (“Heliostixio”) and Thermi Sun S.A. (“Thermi Sun”) from Thermi.

(1) Acquisition of Heliostixio

On December 13, 2017, the Group entered into a Share Purchase Agreement (“Heliostixio Purchase Agreement”) with Thermi and purchased 100% equity interest of Heliostixio at a cash price of \$2,108 (EUR 1,757). Heliostixio is a Company located in Greece, with a solar photovoltaic project of 1.082 MW peak capacity. Pursuant to Heliostixio Purchase Agreement, the closing date of the acquisition was December 13, 2017, and the Group obtained related control of Heliostixio.

The acquisition has been accounted for under ASC 805 Business Combinations. The goodwill arose from the acquisition was \$626 and \$651 as of December 31, 2019 and 2018, respectively. No impairment was provided during the years ended December 31, 2019, 2018 and 2017.

(2) Acquisition of Heliohrisi S.A

On March 20, 2019, the Group entered into a Share Purchase Agreement (“Heliohrisi Purchase Agreement”) with Thermi and purchased 100% equity interest of Heliohrisi. Heliohrisi is a company located in Greece, with a solar photovoltaic project of 1.99 MW peak capacity. The solar photovoltaic facility began commercial operation in July 2012. The output of the plant is contracted under a 27-year PPA which began on the commercial operation date. The acquisition was in accordance with the Company's overall growth strategy.

The total consideration for acquiring Heliohrisi was \$4,013 which was paid in cash as of December 31, 2019 and there is no noncash or contingent consideration. The acquisition is accounted as an asset acquisition according to ASU 2017-01 since substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset. The excess of consideration over fair value of the assets acquired of \$777 was allocated to property, plant and equipment.

(3) Acquisition of Thermi Sun S.A.

On November 1, 2019, the Group entered into a Share Purchase Agreement (“Thermi Sun Purchase Agreement”) with Thermi and purchased 100% equity interest of Thermi Sun. Thermi Sun is a company located in Greece, with two solar photovoltaic project of totally 4.4 MW peak capacity. The solar photovoltaic facility began commercial operation in July 2012. The output of the plant is contracted under a 27-year PPA which began on the commercial operation date. The acquisition was in accordance with the Company's overall growth strategy.

The total consideration for acquiring Thermi Sun was \$8,476 which was paid in cash as of December 31, 2019, and there is no noncash or contingent consideration. The acquisition is accounted as an asset acquisition according to ASU 2017-01 since substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset. The excess of consideration over the fair value of the assets acquired of \$232 was allocated to property, plant and equipment.

6. Accounts Receivable, net

The accounts receivable as of December 31, 2019 and 2018 consisted of the following:

	December 31, 2019	December 31, 2018
Accounts receivable	\$ 17,001	\$ 28,410
Less: Allowance for doubtful accounts	(462)	(633)
Accounts receivable, net	<u>\$ 16,539</u>	<u>\$ 27,777</u>

The movements of allowance for doubtful accounts are as follows:

	2019	2018	2017
Balance as at January 1	\$ 633	\$ 1,520	\$ 1,592
Addition	101	202	1,536
Written off	(45)	—	(1,526)
Reversal	(225)	(1,002)	(152)
Foreign currency translation difference	(2)	(87)	70
Balance as at December 31	<u>\$ 462</u>	<u>\$ 633</u>	<u>\$ 1,520</u>

On March 18, 2019, Solar Juice, entered into debtor finance agreements with Scottish Pacific (BFS) Pty Ltd. (“Scottish Pacific”), whereby Scottish Pacific provided Solar Juice invoice discounting facility (see Note 16 Short-term Borrowings and Long-term Borrowings). As of December 31, 2019 and 2018, all the outstanding Accounts receivable of Solar Juice was pledged to Scottish Pacific for a total gross amount of \$9,761 and \$8,345, respectively.

7. Inventories, net

Inventories as of December 31, 2019 and 2018 consisted of the following:

	December 31, 2019	December 31, 2018
Finished goods	\$ 12,216	\$ 9,867
Goods in transit	1,326	2,039
Raw materials	239	—
Total inventories, net	<u>\$ 13,781</u>	<u>\$ 11,906</u>

During the years ended December 31, 2019, 2018 and 2017, inventories were written down by \$103, \$nil and \$366 from continuing operations, respectively, to reflect the lower of cost or net realizable value.

8. Project Assets, net

Project assets as of December 31, 2019 and 2018 consist of the following:

	December 31, 2019	December 31, 2018
Project assets completed for sale	\$ 17,847	\$ 21,215
Project assets under development	16,490	19,807
Total project assets	<u>34,337</u>	<u>41,022</u>
Current, net of impairment loss	\$ 17,842	\$ 24,654
Noncurrent, net of impairment loss	\$ 16,495	\$ 16,368

During the years ended December 31, 2019, 2018 and 2017, impairment losses of \$2,455, \$nil and \$687 were recorded for certain project assets held for development and sale from continuing operations, respectively. The impairment provided for the year ended December 31, 2019 is mainly for the project assets located in Japan.

During the years ended December 31, 2019, 2018 and 2017, the Group recognized total revenue from sales of PV project assets and sales of pre-development solar projects of \$6,728, \$26,603 and \$6,042 from continuing operations, respectively, and cost of \$7,703, \$23,418 and \$6,229 from continuing operations were recognized accordingly.

9. Prepaid Expenses and Other Current Assets, net

Prepaid expenses and other current assets, net as of December 31, 2019 and 2018 consist of the following:

	December 31, 2019	December 31, 2018
Value-added tax recoverable, current	\$ 193	\$ 483
Deposit and prepayment for acquisitions, net of provision of \$10,921 and \$10,840, respectively (a)	56	55
Other deposit and prepayment, net of provision of \$3,584 and \$452, respectively (b)	2,659	1,216
Other receivable, net of provision of \$1,968 and \$914, respectively (c)	2,262	2,628
Total prepaid expenses and other current assets	<u>\$ 5,170</u>	<u>\$ 4,382</u>

(a) Deposit and Prepayment for Acquisitions

Deposit and prepayment for acquisitions as at December 31, 2019 primarily include: i) an amount of \$8,625 (2018: \$8,543) relating to the acquisition of RE Capital Projects. The prepayment for acquisition of RE Capital Projects mainly included cash of \$2,640 and the Group's ordinary shares amounting to \$5,500. In April 2017, the acquisition was terminated and both parties agreed that the ordinary shares would be transferred back to the Group and the cash portion would not be refunded. Thus, provision for doubtful recoveries of \$8,569 (2018: \$8,488) was accrued, and the prepayment for acquisition was written down to the recovered amount of \$56 and \$55 as of December 31, 2019 and 2018; ii) prepayment of \$2,288 (2018: \$2,288) relating to acquisition of the Kashima PV station. The Group assessed the collectability is remote and full provision for doubtful recoveries was accrued.

(b) Other Deposit and Prepayment

Other deposit and prepayment primarily include: i) prepayment of \$3,132 to purchase land from Shengrun Intl Industry Group INC ("Shengrun") to develop solar projects in California as of December 31, 2019, of which full provision has been provided during the year ended December 31, 2019. The total contract price is \$19,577 and the Group has the right to redeem the prepayment within six months after May 21, 2019. In November 2019, the Group decide to terminate the transaction and require Shengrun to return \$3,132 before December 15, 2019. However, the Group failed to collect it till the issuance of the financial statements. The Group provided full provision after assessing the possibility of collectivity; ii) prepayment made to vendors to purchase PV modules, rental deposits and other prepaid expenses.

(c) Other receivable

Other receivable as at December 31, 2019 mainly included: i) the business fund lent to a third party, Tacoo Corporation with no interest bearing of \$1,320 (2018: \$2,107). The Company assessed the collectability of the receivable and concluded no provision accrued as of December 31, 2019 and 2018; ii) other receivable of \$2,910 (2018: \$1,435) for project payment on behalf of third parties, the Group assessed the collectability and provision of \$1,968 (2018: \$914) was accrued.

10. Intangible Assets, net

Intangible assets, net as of December 31, 2019 and 2018 consisted of the following:

	Useful Life (in months)	Gross	Accumulated Amortization	Impairment Charge	Net
As of December 31, 2019					
Patent	57	\$ 2,700	\$ (2,700)	\$ —	\$ —
Customer Relationship	120	4,370	(1,547)	(1,295)	1,528
		<u>\$ 7,070</u>	<u>\$ (4,247)</u>	<u>\$ (1,295)</u>	<u>\$ 1,528</u>
As of December 31, 2018					
Patent	57	\$ 2,700	\$ (2,700)	\$ —	\$ —
Customer Relationship	120	4,366	(1,270)	(1,295)	1,801
		<u>\$ 7,066</u>	<u>\$ (3,970)</u>	<u>\$ (1,295)</u>	<u>\$ 1,801</u>

The customer relationship was mainly contributed by the acquisition of Solar Juice in May 2015. As customer relationship with clients was the key driver of the revenue for Solar Juice, which will bring further economic benefit to the Group's business. Therefore, the customer relationship was separately identified as an intangible asset on the acquisition date. The balance is amortized over the useful life of 10 years. No impairment loss was provided for intangible assets for the years ended December 31, 2019, 2018 and 2017.

Amortization expense for other intangible assets was \$278, \$300 and \$302 from continuing operations for the years ended December 31, 2019, 2018 and 2017, respectively.

As of December 31, 2019, the estimated future amortization expense related to other intangible assets is as follows:

	USD
2020	\$ 276
2021	276
2022	276
2023	276
2024	276
Thereafter	148
	<u>\$ 1,528</u>

11. Property, Plant and Equipment, net

Property, plant and equipment, net as of December 31, 2019 and 2018 consisted of the following:

	December 31, 2019	December 31, 2018
Photovoltaic solar systems	\$ 32,288	\$ 24,375
Bitcoin mining equipment	4,045	—
Furniture, fixtures and equipment	586	517
Automobile	468	489
Computers	173	1,177
Leasehold improvements	187	188
	<u>37,747</u>	<u>26,746</u>
Less: accumulated depreciation	(3,636)	(5,505)
	<u>34,111</u>	<u>21,241</u>
Less: impairment	(2,328)	(91)
	<u><u>\$ 31,783</u></u>	<u><u>\$ 21,150</u></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, plant and equipment was \$1,981, \$1,204 and \$1,159 from continuing operations for the years ended December 31, 2019, 2018 and 2017, respectively. Impairment loss on property, plant and equipment of \$2,235, \$nil and \$53 from continuing operations for the years ended December 31, 2019, 2018 and 2017, respectively.

12. Investment in Affiliates, net

	December 31, 2019	December 31, 2018
Investment in Sinsin	\$ 69,606	\$ 69,606
Investment in EnSync, Inc.	33,390	33,390
	<u>102,996</u>	<u>102,996</u>
Less: impairment	(33,390)	(33,390)
Investment in affiliates, net	<u><u>\$ 69,606</u></u>	<u><u>\$ 69,606</u></u>

The impairment provision for the years ended December 31, 2019, 2018 and 2017 was \$nil, \$nil and \$2,214, respectively.

13. Fair Value Measurement

As of December 31, 2019, the derivative liability was measured at fair value on a recurring basis in periods subsequent to their initial recognition using Black-Scholes model, which was classified in Level 3 of the fair value hierarchy. There were no assets or liabilities measured at fair value on a recurring basis as of December 31, 2018.

The Company identified derivative instruments arising from embedded conversion features in the convertible promissory note issued to Iliad Research and Trading, L.P. (“ILIAD”) see Note 17 Convertible Bonds). The estimated fair value of the derivative embedded in the convertible note issued to ILIAD was \$652 as of December 31, 2019,

and \$937 as of the issuance date, May 28, 2019, respectively.

The following summarizes the Black-Scholes Model assumptions used to estimate the fair value of the derivative liability at the dates of issuance and the revaluation dates:

	For the Year Ended
	December 31,
	2019
Expected term	0.41-0.5
Risk-free interest rate	1.6%-2.38%
Expected volatility	120%-160%
Expected dividend yield	0%

Derivative liability as of December 31, 2019 and 2018 is \$652 and \$nil, respectively, with the change in fair value of \$285 recorded in the consolidated statements of operations for the year ended December 31, 2019.

The following method and assumptions were used to estimate the fair value on a non-recurring basis as at December 31, 2019 and 2018:

Cash and cash equivalents, restricted cash, accounts receivable and payable, short term borrowings, accrued liabilities, advance from customers and other current liabilities — costs approximate fair value because of the short maturity period.

The fair value of convertible bonds was classified in Level 3 of the fair value hierarchy, and uses binomial model. The estimated fair value of convertible bond with Union Sky was \$12,879 as of February 12, 2017 (see Note 17 Convertible Bonds).

The fair value of options issued to Lighting Charm Limited was classified in Level 3 of the fair value hierarchy, and uses binomial model. The estimated fair value of options issued to Lighting Charm Limited was \$1,260 as of August 21, 2018 (see Note 4(1) Disposition of SPI China).

There have been no transfers between Level 1, Level 2, or Level 3 categories during the years ended December 31, 2019, 2018 and 2017.

14. Accrued Liabilities

Accrued liabilities as of December 31, 2019 and 2018 are as follows:

	December 31,	December 31,
	2019	2018
Tax penalty payable (a)	\$ 2,780	\$ 9,670
Other payable	5,024	4,556
Other tax payables	296	774
Accrued expense	707	1,323
Other accrual and payables	370	172
Total accrued liabilities	<u>\$ 9,177</u>	<u>\$ 16,495</u>

(a) Tax Penalty Payable

The tax penalty payable of \$2,780 and \$9,670 as of December 31, 2019 and 2018, respectively, represented the accrued tax penalty and interest since the Company was late for filing the United States Federal and State income tax returns for the years ended December 31, 2017 and 2016. The Company recorded a tax penalty of \$9,670 as of December 31, 2018 based on best estimation as the Company didn't receive any result from the United States Internal Revenue Service ("IRS") by then.

On May 27, 2019 and February 20, 2020, IRS issued a notice to the Company 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. Therefore, the Company reversed tax penalty payable of \$6,890 for the year ended December 31, 2019 based on IRS notices for Federal income tax and the management reassessment for State income tax. The tax penalty payable for Federal and State income tax plus interest was \$2,780 as of December 31, 2019.

15. Advance from Customers

The Group requires its customers to make deposits before sale of PV projects. Such payments are recorded as advances from customers in the Group's consolidated financial statements, until the sales completed.

16. Short-term Borrowings and Long-term Borrowings

	December 31, 2019	December 31, 2018
Debtor finance	\$ 2,226	\$ 2,691
Short-term bank borrowings	—	146
Other short-term borrowings	414	150
Current portion of long-term borrowings	217	179
Total short-term borrowings and current portion of long-term borrowings	<u>2,857</u>	<u>3,166</u>
Long term bank borrowings	6,256	6,017
Other long-term borrowings	—	836
Total long-term borrowings	<u>6,256</u>	<u>6,853</u>
Less: current portion of long-term borrowings	<u>(217)</u>	<u>(179)</u>
Total long-term borrowings, excluding current portion	<u>6,039</u>	<u>6,674</u>
Total borrowings	<u><u>\$ 8,896</u></u>	<u><u>\$ 9,840</u></u>

As of December 31, 2019, the maturities of the long-term borrowings are as follows:

	USD
2020	\$ 217
2021	238
2022	266
2023	290
2024	346

Thereafter

	4,899
\$	6,256

The Group's subsidiary, Solar Juice, entered into debtor finance agreements with Scottish Pacific on March 18, 2018, whereby Scottish Pacific provided Solar Juice invoice discounting facility with a limit of \$5,637, at service fee charge of 0.13% based on the invoices processed, and discount fee charge of margin percentage plus 1.1% (margin percentage is around 6.76% during 2019 and 2018) based on the average daily debtor finance balance. The accounts receivable collection of Solar Juice was automatically transferred to Scottish Pacific for the debtor finance repayment at the ending of each work day. As of December 31, 2019 and 2018, the debtor finance balance was \$2,226 and \$2,691, respectively.

As of December 31, 2019, long term bank borrowings primarily represent a 10-year long term loan borrowed from Santander Bank amounting to \$6,256 (2018: \$6,017) with a maturity date of February 16, 2027, of which \$4,692 is at interest rate of 3.96% per annum and \$1,564 is at interest rate of 2.83% per annum.

The interest expense of bank loans from continuing operations was \$544, \$525 and \$567 for the years ended December 31, 2019, 2018 and 2017. The average interest rate on short term borrowings from continuing operations was 7.97%, 7.39% and 5.65% per annum for the years ended December 31, 2019, 2018 and 2017, respectively

17. Convertible Bonds

	December 31, 2019	December 31, 2018
Brilliant King Group Limited (1)	\$ 12,000	\$ 12,000
Poseidon Sports Limited (1)	3,000	3,000
Magical Glaze Limited (1)	20,000	6,600
Vision Edge Limited (1)	20,000	20,000
Iliad Research and Trading, L.P. (2)	907	—
Convertible bonds, current	55,907	41,600
Magical Glaze Limited (1)	—	13,400
Convertible bonds, noncurrent	—	13,400
Total convertible bonds	\$ 55,907	\$ 55,000

(1) 2014 and 2015 Convertible Promissory Note and Amendments

In December 2014, the Company entered into three convertible promissory note purchase agreements with Brilliant King Group Limited ("Brilliant King"), Poseidon Sports Limited ("Poseidon") and Union Sky Holding Group Limited ("Union Sky"), respectively whereby the Company agreed to sell and issue to these three investors convertible promissory notes in an aggregate principal amount of \$35,000 which could be converted into 175,000 Ordinary Shares at a fixed conversion price of \$200 unless adjusted for anti-dilution. The convertible notes bore no interest, and might be partially or wholly converted into shares of the Company's ordinary shares at any time prior to maturity at the option of the investor. The convertible promissory notes were due and payable on June 11, 2016.

On June 15, 2015, the Company agreed to issue to Vision Edge Limited ("Vision Edge") convertible promissory note in an aggregate amount of \$20,000 which could be converted into 74,074 Ordinary Shares at a fixed conversion price of \$270 unless adjusted for anti-dilution pursuant to the agreement entered between the Company and Vision Edge. The convertible notes bore no interest, and might be wholly converted into shares of the Company's ordinary shares at any time prior to maturity at the option of the investor. The commitment date of the convertible promissory note is on June 29, 2015. The convertible promissory note was due and payable on June 29, 2016.

The Group defaulted the payment for all outstanding convertible bonds of \$55,000 in June 2016.

First Amendment Agreement with Union Sky

On February 12, 2017, the Group entered into an Amendment Agreement (“First Amendment Agreement”) with Union Sky, one of the convertible bond holders to extend the maturity date of the debt, pursuant to which the repayment of \$6,600, \$6,700 and \$6,700 of the principal amount of the convertible bond was extended to April 30, 2017, January 30, 2018 and January 30, 2019, respectively. The holder has the option to convert the outstanding amounts under the convertible bond into equity interest in the Company at a conversion price per ordinary share that equals the weighted average daily closing price of the Company’s American depositary shares from January 30, 2017 to February 10, 2017.

According to the First Amendment, the convertible bond held by Union Sky was substantially amended by adding the substantive conversion option and the present value of the cash flows under the terms of the amended debt instrument was more than 10 percent different from the present value of the remaining cash flows under the terms of the original instrument. According to ASC Topic 470, if it is determined that the original and new debt instruments are substantially different, and the new debt instrument shall be initially recorded at fair value, and that amount shall be used to determine the debt extinguishment gain or loss to be recognized and the effective rate of the new instrument. Therefore, the amended convertible bond held by Union Sky was initially recorded at fair value, amounting to \$12,879 as of February 12, 2017. As comparing to the carrying value of original of \$20,000, a gain from extinguishment of debt of \$7,121 was recognized in 2017. The discount of \$7,121 of the amended convertible bond is amortized as interest expense using the effective interest rate method through the period of the First Amendment Agreement.

As the Group did not make the first repayment by the end of April 2017, all outstanding debts of \$20,000 under the Agreement became due immediately bearing an annual interest rate of 18%.

Second Amendment Agreement with Union Sky

On June 29, 2018, the Company entered into another amendment agreement (the “Second Amendment Agreement”) with the Union Sky and Magical Glaze Limited (“MGL”), a company and Union Sky was under common control, pursuant to which agreement the Union Sky has transferred all the rights and obligations under the Original agreement and First Amendment Agreement to MGL, and the maturity date of the note was further extended. According to the Second Amendment Agreement, the repayment of \$6,600, \$6,700 and \$6,700 of the principal amount of the convertible bond and interest thereon is due by December 2019, June 2020 and December 2020, respectively. MGL and the Company also agreed that MGL had the option to convert the outstanding amounts under the convertible bond into equity interest of the Company as the same provision stated in the First Amendment Agreement started on June 29, 2018, which the conversion price per ordinary share equals the weighted average daily closing price of the Company’s ordinary shares in the NASDAQ stock market 10 working days prior to the date of signing the second amendment agreement.

Given that the Company was experiencing financial difficulties and the note holder, MGL granted a concession by extending the note maturity dates, resulting in the effective interest rate for the second amendment lower than effective interest rate for the first amendment, the Company accounted for the second amendment as a troubled debt restructuring. According to ASC Topic 470, if future undiscounted cash flows are less than the net carrying value of the original debt, a gain is recognized for the difference and the carrying value of the debt is adjusted to the future undiscounted cash flow amount. The future undiscounted cash flow of the second amended convertible bond was \$20,000, which is less than the carrying amount of the first amended convertible bond of \$21,887 as of June 29, 2018. Therefore, the Company recognized a gain on troubled debt restructuring of \$1,887 and the second amended convertible bond held by MGL was recorded at the undiscounted future cash flow, amounting to \$20,000. No interest expense or amortization of debt discount is recorded going forward.

(2) Convertible Promissory Note and Amendment with ILIAD

On May 28, 2019, the Company entered into a Secured Convertible Promissory Note with ILIAD (the “ILIAD Note”), with an initial principal amount of \$1,335. The Company received \$1,250 in cash from the ILIAD, and the remainder \$19 was retained for legal fees for the issuance of the ILIAD Note and the original issue discount of \$62. The ILIAD Note had a 12-month term and carried interest at 10% per annum. The Company’s obligations under the ILIAD Note may be prepaid at any time, provided that in such circumstance the Company would pay 115% of any amounts outstanding under the note and being prepaid. The note could be convertible into shares of the Company’s common stock at a conversion price of \$10 per share (“Conversion Price”) at any time after the issuance date.

ILIAD 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 \$200, with the Company having the option to pay such redemptions in cash, the Company’s common stock at the Redemption Conversion Price, or by a combination thereof. The Redemption Conversion Price should be the lesser of \$10 or 80% of the lowest closing trade price during the ten trading days immediately preceding the applicable measurement date.

The Company determines that the conversion feature within the ILIAD Note meets the requirements to be treated as a derivative and the Company estimates a fair value of the derivative liability using the Black-Scholes Model upon the date of issuance. 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 derivative liability is revalued at the end of each reporting period and any change in fair value is recorded as a change in fair value of derivative liability in the consolidated statements of operations.

On December 10, 2019, the Company made an amended to the ILIAD Note to defer the first redemption until January 1, 2020. The Company evaluated the Amendment in accordance with ASC 470, Debt (“ASC 470”) and determined the Amendment is not considered a troubled debt restructuring or an extinguishment of the existing debt.

The Company recorded a total of \$1,018 debt discount upon the issuance of ILIAD Note, including the \$937 fair value of the embedded derivative liability, \$19 of direct transaction costs incurred, and \$62 original issue discount. The debt discount is amortized to interest expense over the term of the loan. Amortization of the debt discount was \$594 for the year ended December 31, 2019 and was included in interest expense in the accompanying Statements of Operations.

As at December 31, 2019, except the convertible bonds held by MGL and ILIAD, the conversion option of the convertible bonds had expired. As of December 31, 2019 and 2018, the carrying amounts of convertible bonds are \$55,907 and \$55,000, net of unamortized debt discount of \$424 and \$nil, respectively. As of the date of issuance of the accompanying consolidated financial statements, except for the ILIAD Note, the remaining principal amount of the convertible bonds of \$55,000 remained unpaid, which are all due within the next 12 months.

18. Consideration Payable

Consideration payable of \$54,000 and \$53,824 as of December 31, 2019 and 2018 mainly represented: i) unpaid purchase consideration of Sinsin of \$42,723 and \$43,595 as of December 31, 2019 and 2018, respectively; ii) Accrued interest for the unpaid purchase consideration of Sinsin of \$11,277 and \$8,712 with an interest rate of 6% for the unpaid purchase price, as of December 31, 2019 and 2018, respectively; iii) unpaid purchase consideration of Heliostixio of \$nil and \$1,517 as of December 31, 2019 and 2018, respectively (see Note 5(1) Acquisition of Heliostixio).

19. Amount Due to an Affiliate

	December 31, 2019	December 31, 2018
Amount due to an affiliate, current	\$ 9,128	\$ 8,819
Amount due to an affiliate, noncurrent	1,728	—
Total amount due to an Affiliate	<u>\$ 10,856</u>	<u>\$ 8,819</u>

Amount due to an affiliate includes: i) payment made by Sinsin on the behalf of the Group of \$8,819 as of December 31, 2019 and 2018, which is classified as amount due to an affiliate, current; ii) a borrowing of \$729 (EUR 650) from Sinsin on February 20, 2019 with an interest rate of 5% per annum which will mature on December 31, 2024, of which \$146 will be paid in 2020 and classified as amount due to an affiliate, current; ii) a borrowing of \$1,308 (EUR 1,165) from Sinsin on October 14, 2019 with an interest rate of 4.5% per annum which will mature on December 31, 2027, of which \$163 will be paid in 2020 and classified as amount due to and affiliate, current.

20. Ordinary Shares

On December 6, 2017, the Group enacted a one-for-ten reverse stock split as approved by the Group's extraordinary general meeting. On November 12, 2018, the Group enacted a one-for-ten reverse stock split as approved by the Group's extraordinary general meeting. All share and per share amounts in the consolidated financial statements have been retroactively restated to reflect the reverse stock split. The authorized shares of ordinary shares were 500,000,000 shares of a par value of \$0.0001.

During the year ended December 31, 2019 and 2018, the Group issued 107,000 and 663,460 restricted ordinary shares to core management members and other management, respectively (see Note 22 Share-based Compensation).

On January 17, 2019, the Company announced the entry into share purchase agreements with certain existing shareholders (including certain key management personnel of the Company) and other investors, 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 \$7,656. The transaction was closed as of April 12, 2019.

The issued ordinary share of the Company as of December 31, 2019 and 2018 was 14,621,125 shares and 7,914,125 shares, respectively.

21. Noncontrolling Interests

On July 25, 2019, the Company purchased the 20% equity interest of SR II and 30% equity interest of SR V, subsidiaries of the Company in Italy, from Green Equity S.à r.l. ("Green Equity"), the minority shareholder of SR II and SR V. The purchase price was \$75, and the carrying amount of the noncontrolling interest of SR II and SR V was \$1,213 as of the purchase date. Green Equity also waived the amount due from SR II and SR V of \$1,140.

During the year ended December 31, 2019, as a result of purchasing all noncontrolling interest of SR II and SR V, the Company derecognized the noncontrolling interest of \$1,213, and the difference between the purchase price together with the debt forgiveness mount, and the carrying amount of noncontrolling interest was recorded in additional paid-in capital, which was \$2,278.

22. Share-based Compensation

The Company measures employee share-based compensation expense for all share-based compensation awards based on the grant-date fair value and recognizes the cost in the financial statements over the employee requisite service period.

During the years ended December 31, 2019, 2018 and 2017, the total share-based compensation expense was \$821, \$2,756 and \$798, respectively. Among them, \$821, \$2,726 and \$1,174 were attributable to continuing operations, respectively. The following table summarizes the consolidated share-based compensation expense from continuing operations, by type of awards:

	For the Years Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
Employee stock options	\$ 305	\$ 1,799	\$ 886
Restricted stock grants	516	927	288
Total share-based compensation expense	<u>\$ 821</u>	<u>\$ 2,726</u>	<u>\$ 1,174</u>

The following table summarizes the consolidated share-based compensation by line items from continuing operations:

	For the Years Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
General and administrative	\$ 768	\$ 2,579	\$ 1,131
Sales, marketing and customer service	53	147	43
Total share-based compensation expense	<u>\$ 821</u>	<u>\$ 2,726</u>	<u>\$ 1,174</u>

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 Company estimates the fair value of service-based and performance-based stock 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. In the case of performance-based stock options, amortization does not begin until it is determined that meeting the performance criteria is probable. Service-based and performance-based options typically have a ten-year life from date of grant and vesting periods of four years.

Expected Term —The Company's expected term represents the period that the Company'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. For its performance-based awards, the Group has determined the expected term life to be 6.25 years based on contractual life and the seniority of the recipient.

Expected Volatility —The Company uses historical volatility of the price of its ordinary shares to calculate the volatility for its granted options.

Expected Dividend —The Company 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 Company 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 issues 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:

	For the Years Ended		
	December 31, 2019	December 31, 2018	December 31, 2017
Expected term	6.25	6.25	6.25
Risk-free interest rate	1.55%-2.51%	2.54%-3.03%	1.81%-2.30%
Expected volatility	575%-605%	624%-756%	284%-763%
Expected dividend yield	0%	0%	0%

Equity Incentive Plan

On May 8, 2015, the Company adopted the 2015 Equity Incentive Plan (the “2015 Plan”) which permits the Company to grant stock options to directors, officers or employees of the Company or others to purchase shares of Ordinary Stock 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 Company. The Option Price per Share shall be determined by the compensation committee of the Board (“Compensation Committee”), unless expressly approved by the Compensation Committee, shall not be less than 100% of the fair market value of the shares on the date an Option is granted.

During the year ended December 31, 2019 and 2018, 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 is 107,000 and 663,460 shares, respectively. The vesting schedules are 100% vested at the grant date for all the grants. All these shares were issued to the management during the year ended December 31, 2019 and 2018. 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, 2016	550,760	82	7.40	\$ 60,032
Granted	325,300	4		
Exercised	—	—		
Forfeited/expired	(374,800)	36		
Outstanding as of December 31, 2017	501,260	66	7.03	\$ 769
Granted	287,000	13		
Exercised	—	—		
Forfeited/expired	(528,060)	10		
Outstanding as of December 31, 2018	260,200	212	8.59	\$ —
Granted	65,000	3		
Exercised	—	—		
Forfeited/expired	(70,000)	4		
Outstanding as of December 31, 2019	255,200	19	6.70	\$ —
Vested and exercisable as of December 31, 2019	139,450	24	6.47	\$ —
Expected to vest as of December 31, 2019	124,355	26	6.45	\$ —

The following table presents the exercise price and remaining life information about options exercisable at December 31, 2019:

Range of exercise price	Shares Exercisable	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Aggregate Intrinsic Value (\$000)
\$118 - \$172	1,000	5.13	\$ 172.00	\$ —
\$40 - \$117	42,300	6.38	\$ 63.61	—
\$2 - \$39	93,650	7.33	\$ 5.60	—
\$1-\$2	2,500	9.69	\$ 1.96	—
	139,450			\$ —

Following is a summary of our restricted stock awards as follows:

	Number of Shares	Weighted Average Grant-Date Fair Value
Restricted stock units at December 31, 2016	217,059	\$ 151
Granted	—	—
Forfeited	(1,250)	177
Restricted stock units at December 31, 2017	215,809	151
Granted	663,460	1
Forfeited	(250)	185

Restricted stock units at December 31, 2018	879,019	38
Granted	107,000	3
Forfeited	-	-
Restricted stock units at December 31, 2019	<u>986,019</u>	<u>\$ 34</u>

Changes in the Group's non-vested stock awards are summarized as follows:

	Time-based Options		Restricted Stock	
	Shares	Weighted Average Exercise Price Per Share	Shares	Weighted Average Grant-Date Fair Value Per Share
Non-vested as of December 31, 2016	430,358	\$ 46	4,750	\$ 178
Granted	325,300	4	—	—
Vested	(100,663)	43	(2,187)	128
Forfeited	(275,075)	48	(1,250)	177
Non-vested as of December 31, 2017	379,920	\$ 9	1,313	\$ 264
Granted	287,000	13	663,460	1
Vested	(87,285)	25	(663,273)	1
Forfeited	(396,335)	13	(250)	185
Non-vested as of December 31, 2018	183,300	\$ 8	1,250	\$ 185
Granted	65,000	3	107,000	3
Vested	(70,050)	17	(108,250)	5
Forfeited	(62,500)	4	—	—
Non-vested as of December 31, 2019	115,750	\$ 11	—	\$ —

The weighted average grant date fair value of option per share are \$3.48, \$12.54, and \$3.88 for the years ended December 31, 2019, 2018 and 2017. As of December 31, 2019, the unrecognized compensation costs are expected to be recognized over a weighted average period of approximately 1.72 years.

The total fair value of shares vested during the years ended December 31, 2019, 2018 and 2017 was \$690, \$1,382 and \$2,955, respectively. There were no changes to the contractual life of any fully vested options during the years ended December 31, 2019, 2018 and 2017.

23. Income Taxes

Loss before provision for income taxes is attributable to the following geographic locations for the years ended December 31:

	2019	2018	2017
United States	\$ (4,926)	\$ (6,946)	\$ (24,757)
Foreign Countries	(10,130)	1,141	(1,620)
	<u>\$ (15,056)</u>	<u>\$ (5,805)</u>	<u>\$ (26,377)</u>

The provision for income taxes consists of the following for the years ended December 31:

	2019	2018	2017
Current tax:			
Federal tax	\$ —	\$ —	\$ —
State tax	7	7	7
Foreign countries	275	408	226
Total current tax	282	415	233
Deferred tax:			
Federal tax	\$ (9)	15	(16)
State tax	(4)	—	—
Foreign countries	(177)	(98)	(80)
Total deferred tax	(190)	(83)	(96)
Total provision for income taxes	\$ 92	\$ 332	\$ 137

The reconciliation between the actual income tax expense and income tax computed by applying the statutory U.S. Federal income tax rate for the year ended December 31 is as follows:

	2019	2018	2017
Provision for income taxes at U.S. Federal statutory rate	\$ (3,161)	\$ (1,219)	\$ (9,232)
State taxes, net of federal benefit	(944)	(168)	(610)
Foreign taxes at different rate	314	902	1,059
Non-deductible expenses	(936)	(231)	345
Tax law changes	—	188	22,813
Valuation allowance	6,463	45,870	(17,752)
Other	(209)	—	5,086
Disposition of subsidiaries	—	(45,193)	—
Impairments and intangible amortization	—	—	(3,761)
Share Based Compensation	12	579	279
Gain on debt modification	—	(396)	(1,475)
(Reversal) accrual of tax penalty	(1,447)	—	3,385
	\$ 92	\$ 332	\$ 137

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act (“TCJA” or the “Act”) (which is commonly referred to as “U.S. tax reform”). Among other provisions, the Act reduces the top U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, changes the rules related to uses and limitations of net operating loss carry forwards created in tax years beginning after December 31, 2017, and creates new taxes on certain foreign sourced earnings. The Company has reflected the changes resulting from the Act in the financial statements for the period of enactment, the year ended December 31, 2017. The change in corporate rate resulted in a \$22,813 decrease in the Company's gross deferred tax assets, with an offsetting decrease in valuation allowance of the same amount. The Company is not subject to a one-time repatriation tax as no aggregate foreign accumulated earnings and profits existed in the foreign subsidiaries as of December 31, 2019 and 2018. The Company has accounted for additional tax liability in 2018 arising from Global Intangible Low-Taxed Income of \$892

which accounted for as a period cost. In accordance with Staff Accounting Bulletin No. 118, the Company determined that the measurement of deferred tax assets and liabilities, as noted above, was accurate and no other adjustments relating to the Act were necessary.

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. Significant components of the Group's deferred tax assets and liabilities for federal, state and foreign income taxes are as follows at December 31 are presented below:

	<u>2019</u>	<u>2018</u>
Deferred tax assets:		
Net operating loss carry forwards	\$ 77,101	\$ 66,775
Temporary differences due to accrued warranty costs	467	459
Impairment of property, plant and equipment, and project assets	1,464	—
Investment in subsidiaries	3,670	4,134
Credits	16	16
Allowance for bad debts	1,502	21
Fair value adjustment arising from subsidiaries acquisition	806	4,949
Stock compensation	858	661
Unrealized loss on derivatives	5,095	5,006
Unrealized investment loss	5,409	4,314
Other temporary differences	3,646	7,318
Valuation allowance	(99,976)	(93,513)
Total deferred tax assets	<u>58</u>	<u>140</u>
Deferred tax liabilities:		
Fair value adjustment arising from subsidiaries acquisition	(3,227)	(515)
Other	(279)	—
Total deferred tax liabilities	<u>(3,506)</u>	<u>(515)</u>
Net deferred tax liabilities	<u>\$ (3,448)</u>	<u>\$ (375)</u>

As of December 31, 2019, the Group had a net operating loss carry forward for federal income tax purposes of approximately \$319,439, which will start to expire in the year 2027. The Group had a total state net operating loss carry forward of approximately \$154,237, which will start to expire in the year 2027. The Group has foreign net operating loss carry forward of \$7,801, some of which begin to expire in 2020. The Group had a federal AMT credit of \$16, which does not expire.

Utilization of the federal and state net operating losses is subject to certain annual limitations due to the “change in ownership” provisions of the Internal Revenue Code of 1986 and similar state provisions. However, the annual limitation may be anticipated to result in the expiration of net operating losses and credits before utilization.

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 \$6,463 and \$45,870 during the years ended December 31, 2019 and 2018, and decreased by \$17,752 for the year ended December 31, 2017, respectively.

The Group had no unrecognized tax benefits as of December 31, 2019 and 2018. 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 2011.

The Group has analyzed the impact of adopting ASC 606 on the Group's financial statements and disclosures. There is no material impact on the financial statements of adopting ASC 606. Therefore, there is no material tax impact either.

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 company does not anticipate a material impact on its financial statements as of December 31, 2019 due to the recent enactment.

24. Net Loss Per Share

As a result of the net loss for the years ended December 31, 2019, 2018 and 2017, 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:

	<u>December 31, 2019</u>	<u>December 31, 2018</u>	<u>December 31, 2017</u>
Numerator:			
Numerator for net loss from continuing operations per share-basic and diluted	\$ (15,258)	\$ (6,168)	\$ (26,682)
Numerator for net loss from discontinued operations per share-basic and diluted	\$ —	\$ (6,114)	\$ (64,398)
Denominator:			
Basic weighted-average ordinary shares	12,733,062	7,262,023	6,826,633
Diluted weighted-average ordinary shares	12,733,062	7,262,023	6,826,633
Basic and diluted net loss per share-continuing operations	\$ (1.2)	\$ (0.9)	\$ (4)
Basic and diluted net loss per share-discontinued operations	\$ —	\$ (0.8)	\$ (9)

For the years ended December 31, 2019, 2018 and 2017, the following securities were excluded from the computation of diluted net loss per share as inclusion would have been anti-dilutive.

	<u>December 31, 2019</u>	<u>December 31, 2018</u>	<u>December 31, 2017</u>
Share options and non-vested restricted stock	255,200	261,450	502,573
Convertible bonds (see Note 17)	598,580	465,430	1,633,851
Total	<u>853,780</u>	<u>726,880</u>	<u>2,136,424</u>

25. Leases

The Group has operating leases for its PV stations and office facilities. 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 Company recognizes lease expense for these leases on a straight-line basis over the lease term.

The components of lease expenses were as below:

	For the year ended December 31, 2019
Short term lease expenses	\$ 570
Operating lease expenses excluding short term lease expenses	\$ 510

Maturities of operating lease liabilities as of December 31, 2019 were as follows:

Maturity of Lease Liabilities	Operating Leases
2020	\$ 546
2021	378
2022	223
2023	175
2024	111
Thereafter	1,402
Total lease payments	2,835
Less: interest	(909)
Present value of lease payments	\$ 1,926
Operating lease liabilities, current	\$ 426
Operating lease liabilities, noncurrent	\$ 1,500

Supplemental information related to operating leases was as follows:

	For the year ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities	\$ 497
New operating lease assets obtained in exchange for operating lease liabilities	\$ 2,419
Weighted average remaining lease term	11.8 Years
Weighted average discount rate	6.16%

26. Commitments and Contingencies

(a) Commitments

Product Warranties —The Group offers the industry standard warranty up to 25 years for its PV panels and industry standard five to ten years on inverter and balance of system components. Due to the warranty period, the Group bear the risk of warranty claims long after the Group has shipped product and recognized revenue. In the Group's cable, wire and mechanical assemblies business, the Group's historically warranty claims have not been material. In the Group's solar PV business, the greatest warranty exposure is in the form of product replacement.

During the quarter ended September 30, 2007 and continuing through the fourth quarter of 2010, the Group installed own manufactured solar panels. Since 2011, due to the absence of historical material warranty claims and identical warranty terms, the Group has not recorded any additional warranty provision relating to solar energy systems sold. The accrued warranty reserve is \$1,538 as of December 31, 2019 and 2018.

PV construction contracts entered into during the recent years included provisions under which the Group agreed to provide warranties to the customers. The warranty the Group offers to its customers is identical to the warranty offered to the Group by its suppliers, therefore, the Group passes on all potential warranty exposure and claims, if any, with respect systems sold by the Group to its suppliers. Therefore, the Group has not recorded warranty reserve related to solar energy systems as of December 31, 2019 and 2018.

Capital commitments —As of December 31, 2019 and 2018, the Group had capital commitments of approximately \$5,144 and \$6,617, respectively, from continuing operations. These capital commitments were solely related to contracts signed with vendors for procurement of services or PV related products used for the construction of solar PV systems being developed by the Group.

The capital commitments as at balance sheet dates disclosed above do not include those incomplete acquisitions for investment and business as at balance sheet dates as the agreements could either be terminated unconditionally without any penalty or cancelable when the closing conditions as specified in the agreements could not be met.

(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. As of the issuance of the financial statements, this case is still on the proceeding, and it is uncertain how the court will rule.

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.

27. 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, 2019, 2018 and 2017.

Details of customers accounting for 10% or more of total accounts receivable and notes receivable as of December 31, 2019 and 2018, respectively are:

Customer	December 31, 2019		December 31, 2018	
		% of Total		% of Total
Valta Solar LLC	\$ 5,432	32%	\$ 8,366	25%
Thermi Venture SA.	—	—%	6,763	20%
AES Distribution Energy, LLC	—	—%	3,525	11%
KDC Solar Designed LLC	—	—%	4,823	15%
	<u>\$ 5,432</u>	<u>32%</u>	<u>\$ 23,477</u>	<u>71%</u>

28. Segment information

Operating segments are defined as components of a company which separate financial information is available that is evaluated regularly by the client operating decision maker in deciding how to allocate resources and in assessing performance. The Group's chief operating decision maker is the Chairman, Mr. Peng. Based on the financial information presented to and reviewed by the chief operating decision maker, the Group has determined that it has a single operating and reporting segment: solar energy products and services. The types of products and services in this single segment primarily include: (i) Sales of PV components, (ii) Sales of pre-development solar project, (iii) Sales of PV project assets, (iv) Electricity revenue under PPAs, (v) Bitcoin mining related business, (vi) Sales of hays and others.

Net sales by major product and services are as follows:

	For the years ended December 31,		
	2019	2018	2017
Sales of PV components	\$ 80,941	\$ 93,547	\$ 111,795
Sales of pre-development solar project	(2,835)	15,794	—
Sales of PV project assets	9,563	10,809	6,042
Electricity revenue with PPAs	3,368	3,043	2,793
Bitcoin mining related business	4,197	1,052	—
Sales of hays and others	2,649	1,337	890
	<u>\$ 97,883</u>	<u>\$ 125,582</u>	<u>\$ 121,520</u>

Net sales by geographic location are as follows:

Location (a)	For the years ended December 31,		
	2019	2018	2017
United Kingdom	\$ 979	\$ 932	\$ 6,903
Australia	80,518	91,381	112,174
United States	4,320	18,721	—
Greece	1,138	378	—
Japan	9,563	12,437	511
Italy	1,365	1,733	1,932
	<u>\$ 97,883</u>	<u>\$ 125,582</u>	<u>\$ 121,520</u>

(a) Sales are attributed to countries based on location of customers.

Geographic information, which is based upon physical location, for long-lived assets was as follows:

Location	December 31, 2019	December 31, 2018
Greece	\$ 18,121	\$ 2,637
United States	16,556	16,368
Italy	2,950	9,038
Japan	2	—
UK	9,657	9,642
Canada	1,190	—
Australia	1,952	2,285
	<u>\$ 50,428</u>	<u>\$ 39,970</u>

29. Related Party Transactions

The amount due from related parties of \$154 and \$39 as of December 31, 2019 and 2018 represented the advance payment to management for the Group's business operation.

The amount due to related parties of \$nil and \$79 as of December 31, 2019 and 2018 mainly represented the short term borrowing made from related parties.

In 2018, the Group disposed SPI China to Lighting Charm, an affiliate of Ms. Shan Zhou, the spouse of Xiaofeng Peng, the Group's Chairman of the Board of Directors and Chief Executive Officer. As of the December 10, 2018, the disposition was closed (see Note 4(1) Disposition of SPI China).

During year ended December 31, 2019, SPI China paid operation expenses of \$653 on behalf of the Company, and the payable to SPI China was waived by SPI China.

30. Subsequent Events

(1) Dispute on shareholding of Solar Juice

In May 2020, Solar Juice issued 100 shares in an amount of AU\$20,000 per share to Andrew Burgess, Rami Fedda and Allied Energy, the minority shareholders of Solar Juice. After the issuance of the shares, the Group's shareholding in Solar Juice decreased from 80% to 40%. The issuance and change of shares have been submitted, recorded and maintained by the Australia Securities and Investment Commission ("ASIC"). With the change in shareholding, the board directors of Solar Juice appointed by the Group decreased from four directors to two directors in May 2020, with five other directors.

There's dispute between the Group and the minority shareholders on the issuance of shares of Solar Juice. The Group filed an affidavit to the Federal Court of Australia on May 29, 2020 to invalidate the aforesaid share issuance and appointment and removal of directors, and expect a hearing on July 3, 2020. The dispute is on the proceeding and the Group could not estimate the outcome as of the date of issuance of the consolidated financial statements.

(2) Coronavirus 2019

The spread of COVID-19 around the world in the first quarter of 2020 has caused significant volatility in the markets of U.S., Europe and rest of the world. There is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the economy of U.S. and international markets and, as such, the extent of the business disruption and the related financial impact cannot be reasonably estimated at this time.

(3) Sale of Sun Roof I

On March 16, 2020, the Company closed the sale of Sun Roof I assets, a 479 kWp rooftop solar project located in Aprilia, Italy, that has been in operation since 2012. The sale price was approximately \$1.2 million (EUR 1.1 million) before transaction fees.

The Company 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.