

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

Form 20-F

(Mark One)

- REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934
- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2022
- TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to
- 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

OR

OR

OR

Commission file number: 001-33107
CANADIAN SOLAR INC.
(Exact name of Registrant as specified in its charter)

N/A
(Translation of Registrant's name into English)

Ontario
(Jurisdiction of incorporation or organization)

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Guelph, Ontario, Canada N1K 1E6
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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:

Trading Symbol
CSIQ

Name of Each Exchange on Which Registered
The NASDAQ Stock Market LLC
(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)

Title of Each Class
Common shares with no par value

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.
64,506,055 common shares issued and outstanding which were not subject to restrictions on voting, dividend rights and transferability, as of December 31, 2022.

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.

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

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

Indicate by check mark 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

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes No

† 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.

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INTRODUCTION

Unless otherwise indicated, references in this annual report on Form 20-F to:

- “AC” and “DC” refer to alternating current and direct current, respectively;
- “AUD” and “Australian dollars” refer to the legal currency of Australia;
- “BRL” and “Brazilian reals” refer to the legal currency of Brazil;
- “Canadian Solar Inc.” refers to Canadian Solar Inc., an Ontario, Canada corporation;
- “China” and the “PRC” refer to the People’s Republic of China, excluding, for the purposes of this annual report on Form 20-F, Taiwan and the special administrative regions of Hong Kong and Macau;
- “COD” refers to commercial operation date;
- “CSI”, “we”, “us”, “our company” and “our” refer to Canadian Solar Inc., its predecessor entities and its consolidated subsidiaries;
- “CSI Solar” refers to CSI Solar Co., Ltd.;
- “CS” and “Canadian dollars” refer to the legal currency of Canada;
- “EPC” refers to engineering, procurement and construction;
- “EU” refers to the European Union;
- “FIT” refers to feed-in tariff;
- “GAAP” refers to generally accepted accounting principles;
- “Korea” refer to the Republic of Korea, also commonly known as “South Korea”;
- “OBCA” refers to the *Business Corporation Act* (Ontario);
- “O&M services” refers to operation and maintenance services;
- “PPA” refers to power purchase agreement;
- “PV” refers to photovoltaic. The photovoltaic effect is a process by which sunlight is converted into electricity;
- “RMB” and “Renminbi” refer to the legal currency of China;
- “U.S.” refers to the United States of America;
- “SEC” refers to the U.S. Securities and Exchange Commission;
- “shares” and “common shares” refer to common shares, with no par value, of Canadian Solar Inc.;
- “THB” and “Thai baht” refer to the legal currency of Thailand;
- “U.K.” refers to the United Kingdom;
- “W”, “kW”, “MW” and “GW” refer to watts, kilowatts, megawatts and gigawatts, respectively;
- “ZAR” and “South African rand” refer to the legal currency of South Africa.
- “\$”, “US\$” and “U.S. dollars” refer to the legal currency of U.S.;
- “€” and “Euros” refer to the legal currency of the Economic and Monetary Union of the European Union;
- “£”, “GBP” and “British pounds” refer to the legal currency of the United Kingdom;
- “¥”, “JPY” and “Japanese yen” refer to the legal currency of Japan; and

This annual report on Form 20-F includes our audited consolidated financial statements for the years ended December 31, 2020, 2021 and 2022 and as of December 31, 2021 and 2022.

We use the noon buying rate in The City of New York for cable transfers in Renminbi, Euros, British pounds, Japanese yen, Canadian dollars, Australian dollars, Thai baht, Brazilian reals and South African rand per U.S. dollars as certified for customs purposes by the Federal Reserve Bank of New York to translate Renminbi, Euros, British pounds, Japanese yen, Canadian dollars, Australian dollars, Thai baht, Brazilian reals and South African rand to U.S. dollars not otherwise recorded in our consolidated financial statements and included elsewhere in this annual report on Form 20-F. Unless otherwise stated, the translation of Renminbi, Euros, British pounds, Japanese yen, Canadian dollars, Australian dollars, Thai baht, Brazilian reals and South African rand into U.S. dollars was made by the noon buying rate in effect on December 30, 2022, which was RMB6.8972 to \$1.00, €0.9348 to \$1.00, £0.8280 to \$1.00, ¥131.8100 to \$1.00, C\$1.3532 to \$1.00, AUD1.4695 to \$1.00, THB34.5900 to \$1.00, BRL5.2860 to \$1.00 and ZAR16.9950 to \$1.00. We make no representation that the Renminbi, Euros, British pounds, Japanese yen, Canadian dollars, Australian dollars, Thai baht, Brazilian reals, South African rand or U.S. dollars amounts referred to in this annual report on Form 20-F could have been or could be converted into U.S. dollars, Euros, British pounds, Japanese yen, Canadian dollars, Australian dollars, Thai baht, Brazilian reals South African rand or Renminbi, as the case may be, at any particular rate or at all. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Fluctuations in exchange rates could adversely affect our business, including our financial condition and results of operations."

FORWARD-LOOKING INFORMATION

This annual report on Form 20-F contains forward-looking statements that relate to future events, including our future operating results, our prospects and our future financial performance and condition, results of operations, business strategy and financial needs, all of which are largely based on our current expectations and projections. These forward-looking statements are made under the “safe harbor” provisions of the U.S. Private Securities Litigation Reform Act of 1995. You can identify these statements by terminology such as “may,” “will,” “expect,” “anticipate,” “future,” “intend,” “plan,” “believe,” “estimate,” “is/are likely to” or similar expressions. Forward-looking statements involve inherent risks and uncertainties. These forward-looking statements include, among other things, statements relating to:

- our expectations regarding the worldwide demand for electricity and the market for solar power;
- our beliefs regarding the importance of environmentally friendly power generation;
- our beliefs regarding the value of and ability to monetize our portfolio of solar and battery storage projects;
- our expectations regarding governmental support for solar power;
- our beliefs regarding the rate at which solar power technologies will be adopted and the continued growth of the solar power industry;
- our beliefs regarding the competitiveness of our solar power and battery storage products and services;
- our expectations with respect to increased revenue growth and improved profitability;
- our expectations regarding the benefits to be derived from our supply chain management and vertical integration manufacturing strategy;
- our ability to continue developing our in-house solar component production capability and our expectations regarding the timing of the expansion of our internal production capacity;
- our ability to secure adequate volumes of silicon, solar wafers and cells at competitive cost to support our solar module production;
- our beliefs regarding the effects of environmental regulation;
- our future business development, results of operations and financial condition;
- competition from other manufacturers of solar power or battery storage products and conventional energy suppliers;
- our ability to successfully expand our range of products and services and to successfully execute plans for our energy business;
- our ability to develop, build and sell solar and battery storage projects in the U.S., Canada, Japan, China, the EU, U.K., Brazil, Mexico, Chile, Colombia, Australia, Taiwan and elsewhere;
- our ability to develop and operate solar power systems in Brazil, China, the EU and elsewhere; and
- our beliefs with respect to the outcome of the investigations and litigation to which we are a party.

Known and unknown risks, uncertainties and other factors may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by forward-looking statements. See “Item 3. Key Information—D. Risk Factors” for a discussion of some of the risk factors that may affect our business and results of operations. These risks are not exhaustive. Other sections of this annual report may include additional factors that could adversely influence our business and financial performance. Moreover, because we operate in an emerging and evolving industry, new risk factors may emerge from time to time. We cannot predict all risk factors, nor can we assess the impact of all or any of these factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those expressed or implied in any forward-looking statement. We do not undertake any obligation to update or revise the forward-looking statements except as required under applicable law.

PART I

Our Corporate Structure and Operations in China

Canadian Solar Inc. is a corporation governed by the laws of the province of Ontario, Canada with operations in North America, South America, Europe, South Africa, the Middle East, Australia and Asia through our operating subsidiaries in which we have equity ownership. Through the equity ownership in our subsidiaries, we primarily conduct our manufacturing operations in China and Southeast Asia, and have made certain investments in solar power system and project assets in China. See “Item 4. Information on the Company—C. Organizational Structure” for additional information on our corporate structure, including a list of our significant subsidiaries. Investors in our common shares thus are not purchasing equity interests in our operating subsidiaries, but instead are purchasing equity interests solely in our Canadian parent company. As used in this annual report, references to “CSI”, “we”, “us”, “our company” or “our” are made as to Canadian Solar Inc., its predecessor entities and its consolidated subsidiaries; references to “Canadian Solar Inc.” are made as to the Canadian parent company only.

We are exposed to legal and operational risks associated with having a significant portion of our manufacturing operations in China. We are subject to risks arising from the PRC legal system, including the uncertainty in the interpretation and enforcement of the evolving PRC policies, laws and regulations. Recently, the Chinese government initiated a series of regulatory actions and statements to regulate business operations in China with little advance notice, such as those related to regulatory approvals on offerings conducted overseas, anti-monopoly regulatory actions, and oversight on cybersecurity and data privacy. Such actions could significantly limit or completely hinder our ability to offer or continue to offer securities to investors. Implementation of industry-wide regulations in this nature may cause the value of such securities to significantly decline or be worthless. See “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China” for additional information of the risks associated with our operations in China.

For example, the recently promulgated PRC Data Security Law and the PRC Personal Information Protection Law in 2021, the Cybersecurity Review Measures issued by the Cyberspace Administration of China, or the CAC, and several other PRC governmental authorities in 2021, as well as the Regulations on Critical Information Infrastructure promulgated by the PRC State Council in 2021, expose uncertainties and potential additional restrictions on China-based overseas-listed companies. Although we have not been informed that we are identified as a critical information infrastructure operator by any governmental authorities, we face uncertainties as to whether we will be subject to the oversight of the CAC and how such oversight may impact us.

On September 1, 2022, Measures for the Security Assessment of Outbound Data Transfers and its guideline Guide to Applications for Security Assessment of Outbound Data Transfers (First Edition) promulgated by the CAC took effect. According to the aforementioned rule, a data processor is required to apply to the national cyberspace administration for security assessment of outbound data transfer through local provincial cyberspace administration, if the data processor provides important data abroad. The rule is newly adopted, and it is not certain how the CAC will interpret and enforce it. If we are required to go through a security assessment of outbound data transfer, we will receive a notice on assessment result after completion of the assessment, and we may be notified to terminate the outbound data transfer or make rectification as required. In addition, we have to regulate our outbound data transfer activities in accordance with the applicable laws and regulations on the security management of outbound data transfer and the relevant requirements specified in the notice on assessment result. For a detailed discussion of the related risks, see “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—Failure to comply with governmental regulations and other legal obligations concerning data protection and cybersecurity may materially and adversely affect our business, as we routinely collect, store and use data during the conduct of our business.”

On February 17, 2023, the CSRC issued the Trial Administrative Measures of Overseas Securities Offering and Listing by Domestic Companies and relevant supporting guidelines (collectively, the “Trial Administrative Measures”), which became effective on March 31, 2023. According to the Trial Administrative Measures, a PRC domestic company that seeks to offer and list securities in overseas markets shall fulfill the filing procedure with the CSRC as per requirement of the Trial Administrative Measures. When a PRC domestic company seeks to directly offer and list securities in overseas markets, the issuer shall file with the CSRC. When a PRC domestic company seeks to indirectly offer and list securities in overseas markets, the issuer shall designate a major PRC domestic operating entity, which shall, as the domestic responsible entity, file with the CSRC. Initial public offerings or listings in overseas markets shall be filed with the CSRC within three working days after the relevant application is submitted overseas. If an issuer offers securities in the same overseas market where it has previously offered and listed securities, subsequent filings shall be made with the CSRC within three working days after the offering is completed. In addition, upon the occurrence of any material event, such as change of control, investigations or sanctions imposed by overseas securities regulatory agencies or other relevant competent authorities, change of listing status or transfer of listing segment, or voluntary or mandatory delisting, after an issuer has offered and listed securities in an overseas market, the issuer shall submit a report thereof to CSRC within three working days after the occurrence and public disclosure of such event.

On February 24, 2023, the CSRC, the Ministry of Finance, the National Administration of State Secrets Protection and the National Archives Administration of China issued Provisions on Strengthening Confidentiality and Archives Administration in Respect of Overseas Issuance and Listing of Securities by Domestic Enterprises which took effect on March 31, 2023. These provisions extend the scope of application to overseas indirectly listed enterprises. To provide or publicly disclose to the relevant securities companies, securities service agencies, overseas regulatory authorities and other entities and individuals, or to provide or publicly disclose, through its overseas listing entities, any document or material involving State secrets or work secrets of State agencies, a PRC domestic enterprise shall strictly go through the corresponding procedures, and when providing documents and materials to the relevant securities companies and securities service agencies, PRC domestic enterprises shall provide the relevant securities companies and securities service agencies with a written statement on the secrets. The relevant securities companies or securities service agencies shall properly retain the foregoing written statement for future reference. A PRC domestic enterprise shall perform the corresponding procedures in accordance with the relevant provisions of the Chinese government, if it provides accounting records or photocopies of accounting records to entities and individuals such as the relevant securities companies, securities service agencies and overseas regulatory authorities.

According to the Trial Administrative Measures, PRC domestic companies that have already been listed overseas before March 31, 2023 shall be deemed as existing issuers. Due to the fact that our common shares have been listed on the Nasdaq Global Select Market, we are deemed as an existing issuer, and thus are currently not required to obtain permission or approval from any of the PRC authorities including the CSRC or the CAC or to complete the filing procedures with the CSRC for our historical securities offerings pursuant to the Trial Administrative Measures.

Pursuant to the Trial Administrative Measures, we may be required to submit filings to the CSRC in the event that we conduct any securities offerings in the future.

It is uncertain whether we will be required to obtain permission from the PRC government to maintain our listing status on U.S. exchanges or continue to offer our securities to investors in the future, and even when such permission is obtained, whether it will be later denied or rescinded. For a detailed discussion of the related risks, see “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—Any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer securities to investors and cause the value of our securities to significantly decline or be worthless.”

Furthermore, with the trend of strengthening anti-monopoly supervision around the world, the PRC government has promulgated new anti-monopoly and competition laws and regulations and strengthened the enforcement under these laws and regulations, paying more attention to corporate compliance. On February 7, 2021, the Anti-monopoly Commission of the State Council of the PRC promulgated the Guidelines for Anti-monopoly in the field of Platform Economy, which stipulates that any concentration of undertakings involving variable interest entities in Internet industry is subject to anti-monopoly review. On November 15, 2021, the State Administration for Market Regulation of the PRC promulgated the Guidelines for the Overseas Anti-monopoly Compliance of Enterprises. Although we believe that these regulations have little impact on us, there remain uncertainties as to how the laws, regulations and guidelines recently promulgated will be interpreted and implemented. We cannot guarantee that regulators will agree with us or that our business operations comply with such regulations and authorities’ requirements in all respects. If any non-compliance is raised by relevant authorities and determined against us, we may be subject to fines and other penalties. For a detailed discussion of the related risks, see “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—The rules and regulations in China can change quickly with little advance notice. Uncertainties with respect to the Chinese legal system, as well as changes in any government policies, laws and regulations, could adversely affect the overall economy in China or our industry, which could harm our business.”

Risks and uncertainties arising from the Chinese legal system, including risks and uncertainties that the rules and regulations may be inconsistent and change quickly with little advance notice and that the Chinese government may intervene or influence the operations of our PRC subsidiaries at any time, could result in a material change in our operations and the value of our securities. In addition, implementation of industry-wide regulations directly targeting our operations could cause the value of our securities to significantly decline. For a detailed discussion of the related risks, see “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—The rules and regulations in China can change quickly with little advance notice. Uncertainties with respect to the Chinese legal system, as well as changes in any government policies, laws and regulations, could adversely affect the overall economy in China or our industry, which could harm our business.” and “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—The Chinese government has exercised and continues to exercise substantial control over virtually every sector of the Chinese economy. It may intervene or influence the operations of our PRC subsidiaries at any time, which could result in a material change in our operations and the value of our securities.”

The Holding Foreign Companies Accountable Act

On December 2, 2021, the SEC adopted final amendments implementing the disclosure and submission requirements of the Holding Foreign Companies Accountable Act, or the HFCAA. The final amendments establish the SEC's procedures for determining whether a registrant is a "Commission-Identified Issuer" under the HFCAA and prohibiting the trading of Commission-Identified Issuer's securities. If the SEC determines that we are a Commission-Identified Issuer under the HFCAA for three consecutive years, or if the audit report filed as part of our annual report with the SEC is otherwise deemed not to be in compliance with the requirements of the Exchange Act due to the Public Company Accounting Oversight Board, or the PCAOB's inability to inspect our auditor, the SEC will prohibit our common shares from being traded on a national securities exchange or in the over-the-counter trading market in the U.S. In the event of such determination, the Nasdaq is expected to delist our common shares.

On December 16, 2021, the PCAOB issued a report to notify the SEC its determinations that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong, and identifies the registered public accounting firms in mainland China and Hong Kong that are subject to such determinations. Our auditor, Deloitte Touche Tohmatsu Certified Public Accountants LLP, the independent registered public accounting firm that issues the audit report included in the Form 20-F, is located in China and is included in the list of PCAOB identified firms in the determination report issued in December 2021.

Consequently, we were conclusively identified as a "Commission-Identified Issuer" on May 26, 2022.

On August 26, 2022, the PCAOB announced that it signed a Statement of Protocol with the CSRC and the Ministry of Finance, which it described as the first step toward opening access for the PCAOB to inspect and investigate completely registered public accounting firms in mainland China and Hong Kong. On December 15, 2022, the PCAOB announced that it has secured complete access to inspect and investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB also vacated its previous determinations issued on December 16, 2021. Therefore, our auditor is currently able to be fully inspected and investigated by the PCAOB. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCAA after we file this annual report on Form 20-F for the fiscal year ended December 31, 2022. Until such time as the PCAOB issues any new determination, we do not expect our securities to be subject to a trading prohibition under the HFCAA.

On December 29, 2022, the Consolidated Appropriations Act, 2023 was signed into law, which, among other things, amended the HFCAA to reduce to number of consecutive years an issuer can be identified a Commission-Identified Issuer before the SEC must impose an initial trading prohibition on the issuer's securities from three years to two years. Therefore, once an issuer is identified as a Commission-Identified Issuer for two consecutive years, the SEC is required under the HFCAA to prohibit the trading of the issuer's securities on a national securities exchange and in the over-the-counter market.

Each year, the PCAOB will determine whether it can inspect and investigate completely audit firms in mainland China and Hong Kong, among other jurisdictions. If the PCAOB determines in the future that it no longer has full access to inspect and investigate completely accounting firms in mainland China and Hong Kong and we use an accounting firm headquartered in one of these jurisdictions to issue an audit report on our financial statements filed with the SEC, we would be identified as a Commission-Identified Issuer following the filing of the annual report on Form 20-F for the relevant fiscal year. In accordance with the HFCAA, our securities would be prohibited from being traded on a national securities exchange or in the over-the-counter trading market in the United States if we are identified as a Commission-Identified Issuer for two consecutive years in the future. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment. For a detailed discussion of the related risks, see "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Our common shares may be prohibited from trading in the United States under the HFCAA in the future if it is later determined that the PCAOB is unable to inspect or investigate completely our auditor. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment."

ITEM 1 IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2 OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3 *KEY INFORMATION*

Risks Related to Doing Business in China

Canadian Solar Inc. is a corporation governed by the laws of the province of Ontario, Canada with operations in North America, South America, Europe, South Africa, the Middle East, Australia and Asia through our operating subsidiaries in which we have equity ownership. Through the equity ownership in our subsidiaries, we primarily conduct our manufacturing operations in China and Southeast Asia, and have made certain investments in solar power system and project assets in China. As a result, we are subject to significant regulatory, liquidity, and enforcement risks relating to doing business in China, including, but not limited to, the following:

- The enforcement of the labor contract law and increases in labor costs in the PRC may adversely affect our business and our profitability.
- The increase or decrease in tax benefits from local tax bureau could affect our total PRC taxes payments, which could have a material and adverse impact on our financial condition and results of operations.
- There are significant uncertainties regarding our tax liabilities with respect to our income under the EIT Law.
- Dividends paid by us to our non-PRC shareholders and gains on the sale of our common shares by our non-PRC shareholders may be subject to PRC enterprise income tax liabilities or individual income tax liabilities.
- Restrictions on currency exchange may limit our ability to receive and use our revenues effectively.
- The rules and regulations in China can change quickly with little advance notice. Uncertainties with respect to the Chinese legal system, as well as changes in any government policies, laws and regulations, could adversely affect the overall economy in China or our industry.
- The Chinese government has exercised and continues to exercise substantial control over virtually every sector of the Chinese economy. It may intervene or influence the operations of our PRC subsidiaries at any time, which could result in a material change in our operations and the value of our securities.
- Any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer securities to investors and cause the value of our securities to significantly decline or be worthless.
- Failure to comply with governmental regulations and other legal obligations concerning data protection and cybersecurity may materially and adversely affect our business, as we routinely collect, store and use data during the conduct of our business.
- You may have difficulty enforcing judgments obtained against us.

For further details, see “—D. Risk Factors—Risks Related to Doing Business in China” and “—D. Risk Factors—Risks Related to Our Common Shares.”

Permissions Required from the PRC Authorities for Our Operations

We conduct our business in the PRC through our PRC subsidiaries. Our operations in the PRC are governed by PRC laws and regulations. We are required to obtain or complete construction enterprise and engineering qualifications, electric power business permit, work safety license, registration of foreign trade operator operators, and registration certificates of customs declaration entity to operate our business in China. As of the date of this annual report, we believe that our PRC subsidiaries have obtained and completed all requisite permissions and registrations for our operations in all material aspects from relevant PRC authorities and none of the requisite permission or registrations for our operations in all material aspects have been denied by relevant PRC authorities. However, given the uncertainties of interpretation and implementation of relevant laws and regulations and the enforcement practice by government authorities, we cannot assure you that we have obtained all the permits or licenses required for conducting our business in the PRC.

In connection with historical offering of our securities in the United States, under the PRC laws and regulations currently in effect, we are not aware of any PRC laws or regulations which explicitly require us to obtain any permission from the CSRC or other Chinese authorities. We believe that we and our PRC subsidiaries (i) are not required to obtain permissions from the CSRC, (ii) are not required to go through cybersecurity review by the CAC under the Cybersecurity Review Measures, and (iii) have not received or were denied such requisite permissions by any PRC authority.

However, we cannot guarantee that the regulators will agree with us. In particular, there remain uncertainties as to how PRC government will regulate overseas securities offerings and overseas listings in general, as well as how related regulations will be interpreted or implemented. Although we intend to closely monitor the relevant regulatory environment and fully comply with the regulations or policies that have been issued by the CSRC, CAC, or other PRC authorities to date, we cannot assure you that we will be able to fully comply with requirements to obtain any permissions and approvals from PRC authorities that may be in effect for the future.

If we or our PRC subsidiaries (i) do not receive or maintain such permissions or approvals, (ii) inadvertently conclude that such permissions or approvals are not required, or (iii) are required to obtain permissions or approvals in the future in the event of a change to the applicable laws, regulations, or interpretations, but we fail to obtain such permissions or approvals in a timely manner, or at all, we may face adverse actions or sanctions by PRC regulatory authorities, which may include fines and penalties on our operations in China, order to suspend our PRC subsidiaries' businesses, and other actions that could have an adverse effect on our business. Furthermore, our ability to offer or continue to offer securities to investors may be significantly limited or completely hindered, and the value of our securities may significantly decline or be worthless.

In addition, the PRC government has promulgated certain regulations and rules to exert more oversight and control over offerings that are conducted overseas and/or foreign investment. On February 17, 2023, the CSRC issued the Trial Administrative Measures, which became effective on March 31, 2023. According to the Trial Administrative Measures, PRC domestic companies that directly or indirectly offer or list their securities in an overseas market are required to file with the CSRC. In addition, an overseas listed company must also submit the filing with respect to its follow-on offerings, issuance of convertible corporate bonds and exchangeable bonds, and other equivalent offering activities, within a specified time frame under the Trial Administrative Measures.

According to the Trial Administrative Measures, PRC domestic companies that have already been listed overseas before March 31, 2023 shall be deemed as existing issuers. Due to the fact that our common shares have been listed on the Nasdaq Global Select Market, we are deemed as an existing issuer, and thus are currently not required to obtain permission or approval from any of the PRC authorities including the CSRC or the CAC or to complete the filing procedures with the CSRC for our historical securities offerings pursuant to the Trial Administrative Measures.

Pursuant to the Trial Administrative Measures, we may be required to submit filings to the CSRC in the event that we conduct any securities offerings in the future.

For a detailed discussion of the related risks, see “—D. Risk Factors—Risks Related to Doing Business in China—Any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer securities to investors and cause the value of our securities to significantly decline or be worthless.” and “—D. Risk Factors—Risks Related to Doing Business in China—Failure to comply with governmental regulations and other legal obligations concerning data protection and cybersecurity may materially and adversely affect our business, as we routinely collect, store and use data during the conduct of our business.”

Cash and Asset Flows through Our Organization

We conduct operations in North America, South America, Europe, South Africa, the Middle East, Australia and Asia through our operating subsidiaries in which we have equity ownership. Our manufacturing operations are conducted through our subsidiaries primarily in China and Southeast Asia in which we have equity ownership and a substantial part of our revenues, expenses, cash and cash equivalent, and restricted cash are denominated in Renminbi.

Cash may be transferred within our consolidated group by way of funds to our subsidiaries, either in the form of capital contributions, working capital cash advances or working capital payable, directly or through intermediate holding companies. Canadian Solar Inc. may provide loans to its subsidiaries and vice versa, and our subsidiaries may make dividends or other distributions to Canadian Solar Inc., directly or through intermediate holding companies. These cash transfers factor the capital and liquidity needs of our subsidiaries, and are subject to our internal approval processes and funding arrangements, taking into account local regulations and tax laws. We have not faced restrictions or limitations in our ability to transfer cash between subsidiaries in countries where we earn and hold significant cash, or continue to make significant investments.

In 2020, we announced our plan to carve-out and publicly list our legacy Module and System Solutions subsidiary, CSI Solar Co., Ltd. (“CSI Solar”), in China (“the IPO”). In preparation for the IPO, we transferred our China solar power system and project assets from CSI Solar to our Global Energy business for a cash consideration of \$19.2 million in 2021.

Canadian Solar Inc. transferred an aggregate of \$391.3 million, \$339.6 million and \$187.5 million of cash in the form of capital contributions and loans to our subsidiaries in 2020, 2021 and 2022, respectively. Canadian Solar Inc. further transferred an aggregate \$206.9 million in 2021, and received an aggregate \$287.9 million and \$11.0 million in 2020 and 2022, of cash related to net working capital advances to subsidiaries. These transfers were made to our Global Energy subsidiaries primarily for solar and battery storage projects. Apart from these transfers to our Global Energy subsidiaries, \$20.0 million was transferred as capital contribution to CSI Solar in 2020, prior to its carve-out IPO plan. There were no transfers made to the other PRC subsidiaries. Our PRC operations are generally funded through the revenue cash flows from the sales of solar modules, solar system kits and battery storage solutions, and domestic borrowings within CSI Solar.

Canadian Solar Inc. received an aggregate of \$20.5 million, \$533.8 million and \$172.6 million of cash in 2020, 2021 and 2022, respectively, from repayment of loans by our Global Energy subsidiaries. Canadian Solar Inc. further transferred \$340.5 million and \$42.2 million in 2020 and 2021, respectively, and received an aggregate \$38.6 million in 2022, of cash related to net working capital payable to our Global Energy subsidiaries. There were no cash proceeds nor distribution received from PRC subsidiaries in 2020, 2021 and 2022, and Canadian Solar Inc. received an aggregate of \$49.6 million of cash related to a loan from a Global Energy subsidiary in 2022.

In addition, we conduct regular procurement transactions with CSI Solar's subsidiaries related to purchase of modules and battery storage solutions for our Global Energy projects.

Prior to the completion of the carve-out IPO restructuring, CSI Solar paid a one-time dividend of RMB847.6 million (\$123.5 million) to Canadian Solar Inc. in 2020. This transaction was subjected to a 10% withholding income tax rate of RMB84.8 million (\$12.4 million) based on the EIT Law and its implementation rules. There have not been any transfers, dividends, or distributions from CSI to our U.S. investors to date.

Our ability to pay dividends, if any, to our shareholders and to service any debt we may incur will depend upon dividends paid by and loan repayment or distributions by our subsidiaries. Under PRC laws and regulations, our PRC subsidiaries are subject to certain restrictions with respect to paying dividends or otherwise transferring any of their net assets offshore to us. In particular, our PRC subsidiaries are required to set aside no less than 10% of profit after tax as appropriations to the general reserve and other statutory reserves. These reserves, together with the registered capital, are not distributable as cash dividends except in the event of liquidation and with approval from the local PRC government. As of December 31, 2022, these restricted net assets in the PRC amounted to \$658.2 million. Furthermore, our PRC subsidiaries are subject to restrictions on currency exchange. Under existing PRC foreign exchange regulations, payments of current account items, including profit distributions, interest payments and expenditures from trade-related transactions, can be made in foreign currencies without prior approval from the People's Bank of China and PRC State Administration of Foreign Exchange, or SAFE, by complying with certain procedural requirements. However, the relevant PRC governmental authorities may limit or eliminate our PRC subsidiaries' ability to purchase foreign currencies in the future for current account transactions. Since a significant amount of our future revenues and cash flow will be generated under our PRC subsidiaries, and most of our cash and cash equivalents and restricted cash are denominated in Renminbi, any existing and future restrictions on dividend or currency exchange may limit our ability to utilize cash generated by our PRC subsidiaries to fund our business activities outside of the PRC or pay dividends in foreign currencies.

In other countries where we earn and hold significant cash, or continue to make significant investments, we believe there are no significant restrictions or limitations on foreign exchange, our ability to transfer cash between entities across borders or to U.S. investors, or our ability to distribute earnings from our subsidiaries. Changes in business environments, debt instruments entered into by our subsidiaries, regulatory changes, and limitations under PRC laws and regulations and other developments outside of our control may prevent some or all of our subsidiaries from making distributions or payments to us in the future.

The Holding Foreign Companies Accountable Act

On December 2, 2021, the SEC adopted final amendments implementing the disclosure and submission requirements of the Holding Foreign Companies Accountable Act, or the HFCAA. The final amendments establish the SEC's procedures for determining whether a registrant is a "Commission-Identified Issuer" under the HFCAA and prohibiting the trading of Commission-Identified Issuer's securities. If the SEC determines that we are a Commission-Identified Issuer under the HFCAA for three consecutive years, or if the audit report filed as part of our annual report with the SEC is otherwise deemed not to be in compliance with the requirements of the Exchange Act due to the Public Company Accounting Oversight Board, or the PCAOB's inability to inspect our auditor, the SEC will prohibit our common shares from being traded on a national securities exchange or in the over-the-counter trading market in the U.S. In the event of such determination, the Nasdaq is expected to delist our common shares.

On December 16, 2021, the PCAOB issued a report to notify the SEC its determinations that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong, and identifies the registered public accounting firms in mainland China and Hong Kong that are subject to such determinations. Our auditor, Deloitte Touche Tohmatsu Certified Public Accountants LLP, the independent registered public accounting firm that issues the audit report included in the Form 20-F, is located in China and is included in the list of PCAOB identified firms in the determination report issued in December 2021.

Consequently, we were conclusively identified as a “Commission-Identified Issuer” on May 26, 2022.

On August 26, 2022, the PCAOB announced that it signed a Statement of Protocol with the CSRC and the Ministry of Finance, which it described as the first step toward opening access for the PCAOB to inspect and investigate completely registered public accounting firms in mainland China and Hong Kong. On December 15, 2022, the PCAOB announced that it has secured complete access to inspect and investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB also vacated its previous determinations issued on December 16, 2021. Therefore, our auditor is currently able to be fully inspected and investigated by the PCAOB. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCAA after we file this annual report on Form 20-F for the fiscal year ended December 31, 2022. Until such time as the PCAOB issues any new determination, we do not expect our securities to be subject to a trading prohibition under the HFCAA.

On December 29, 2022, the Consolidated Appropriations Act, 2023 was signed into law, which, among other things, amended the HFCAA to reduce to number of consecutive years an issuer can be identified a Commission-Identified Issuer before the SEC must impose an initial trading prohibition on the issuer’s securities from three years to two years. Therefore, once an issuer is identified as a Commission-Identified Issuer for two consecutive years, the SEC is required under the HFCAA to prohibit the trading of the issuer’s securities on a national securities exchange and in the over-the-counter market.

Each year, the PCAOB will determine whether it can inspect and investigate completely audit firms in mainland China and Hong Kong, among other jurisdictions. If the PCAOB determines in the future that it no longer has full access to inspect and investigate completely accounting firms in mainland China and Hong Kong and we use an accounting firm headquartered in one of these jurisdictions to issue an audit report on our financial statements filed with the SEC, we would be identified as a Commission-Identified Issuer following the filing of the annual report on Form 20-F for the relevant fiscal year. In accordance with the HFCAA, our securities would be prohibited from being traded on a national securities exchange or in the over-the-counter trading market in the United States if we are identified as a Commission-Identified Issuer for two consecutive years in the future. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment. For a detailed discussion of the related risks, see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Our common shares may be prohibited from trading in the United States under the HFCAA in the future if it is later determined that the PCAOB is unable to inspect or investigate completely our auditor. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment.”

A [Reserved]

B Capitalization and Indebtedness

Not applicable.

C Reasons for the Offer and Use of Proceeds

Not applicable.

D Risk Factors

Risks Related to Our Company and Our Industry

We may be adversely affected by volatile solar power market and industry conditions; in particular, the demand for our solar power and battery storage products and services may decline, which may reduce our revenues and earnings.

Our business is affected by conditions in the solar power market and industry. We believe that the solar power market and industry may from time to time experience oversupply. When this occurs, many solar power project developers, solar system installers and solar power product distributors that purchase solar power products, including solar modules from manufacturers like us, may be adversely affected. Our shipments of solar modules increased in 2021 compared to 2020, and further increased in 2022. The average selling prices for our solar modules declined from the previous year in 2020 but increased in 2021 and in 2022. If the supply of solar modules grows faster than demand and if governments continue to reduce financial support for the solar industry and impose trade barriers for solar power products, demand and the average selling price for our products could be materially and adversely affected.

The solar power market is still at a relatively early stage of development, and future demand for solar power products and services is uncertain. Market data for the solar power industry is not as readily available as for more established industries, where trends are more reliably assessed from data gathered over a longer period of time. In addition, demand for solar power products and services in our largest end markets, including the U.S., Europe, Japan, China, Brazil and India, may not develop or may develop to a lesser extent than we anticipate. Many factors may affect the viability of solar power technology and the demand for solar power products, including:

- the cost-effectiveness, performance and reliability of solar power products and services, including our solar and battery storage projects, compared to conventional and other renewable energy sources and products and services;
- the availability of government incentives to support the development of the solar power industry;
- the availability and cost of capital, including long-term debt and tax equity, for solar and battery storage projects;
- the success of other alternative energy technologies, such as wind power, hydroelectric power, clean hydrogen, geothermal power and biomass fuel;
- fluctuations in economic and market conditions that affect the viability of conventional and other renewable energy sources, such as increases or decreases in the prices of oil, gas and other fossil fuels;
- capital expenditures by end users of solar power and battery storage products and services, which tend to decrease when the economy slows; and
- the availability of favorable regulation for solar power within the electric power industry and the broader energy industry.

If solar power and battery storage technology is not suitable for widespread adoption or if sufficient demand for solar power and battery storage products and services does not develop or takes longer to develop than we anticipate, our revenues may suffer and we may be unable to sustain our profitability.

The operating results of our project development business within Global Energy segment and the mix of revenues from our CSI Solar and Global Energy segments may be subject to significant fluctuation due to a number of factors, including the unpredictability of the timing of the development and sale of our solar and battery storage projects and our inability to find third party buyers for our projects in a timely manner, on favorable terms and conditions, or at all.

Our Global Energy segment develops, sells and/or operates and maintains solar and battery storage projects primarily in the U.S., Brazil, Chile, the U.K., the EU, Japan, China, Taiwan and Australia. Our project development activities have grown over the past several years through a combination of organic growth and acquisitions. After completing their development, we either sell our solar power or battery storage projects to third party buyers, or operate them under PPAs or other contractual arrangements with utility companies or grid operators. Revenues from our Global Energy segment increased by \$397.9 million, or 55%, to \$1,124.1 million for the year ended December 31, 2021 and then decreased by \$302.6 million, or 26.9%, to \$821.5 million for the year ended December 31, 2022. We intend to grow our volume of project sales while optimizing our project monetization strategy by establishing local investment vehicles that will help maximize the value of our project assets and capture additional operational value throughout the partial ownership period, including long-term income from power sales, O&M, asset management and other services. We also intend to monetize certain of our projects before they reach COD. However, there is no assurance whether or when we will be able to realize their estimated resale value. Also, from time to time, we may reclassify project assets as solar power systems as the intention on these projects transition to be held on our balance sheet for the purpose of generating long-term electricity income.

The operating results of our energy business may be subject to significant period-over-period fluctuations for a variety of reasons, including but not limited to the unpredictability of the timing of the development and sale of our solar and battery storage projects, changes in market conditions after we have committed to projects, availability of financing for our projects and changes in government regulations and policies, all of which may result in the cancellation of or delays in the development of projects, inability to monetize or delays in monetizing projects or changes in amounts realized on monetization of projects. If a project is canceled, abandoned or deemed unlikely to occur, we will charge all prior capital costs as an operating expense in the quarter in which such determination is made, which could materially adversely affect operating results.

Further, the mix of revenues from our CSI Solar and Global Energy segments can fluctuate dramatically from quarter to quarter, which may adversely affect our margins and financial results in any given period.

Any of the foregoing may cause us to miss our financial guidance for a given period, which could adversely impact the market price for our common stock and our liquidity.

The execution of our growth strategy depends upon the continued availability of third-party financing arrangements for our customers, which is affected by general economic conditions. Tight credit markets could depress demand or prices for solar power and battery storage products and services, hamper our expansion and materially affect our results of operations.

Most solar and battery storage projects, including our own, require financing for development and construction with a mixture of equity and third-party funding. The cost of capital affects both the demand and price of solar power and battery storage systems. A high cost of capital may materially reduce the internal rate of return for solar and battery storage projects and therefore put downward pressure on the prices of solar systems, solar modules and battery storage systems, which typically comprise a major part of the cost of solar and battery storage projects.

Furthermore, solar and battery storage projects compete for capital with other forms of fixed income investments such as government and corporate bonds. Some classes of investors compare the returns of solar and battery storage projects with bond yields and expect a similar or higher internal rate of return, adjusted for risk and liquidity. Higher interest rates could increase the cost of existing funding and present an obstacle for future funding that would otherwise spur the growth of the solar power and battery storage industry. Moreover, as a result of the effects of inflation in the global economy, certain governmental authorities responsible for administering monetary policy have recently increased, and are likely to continue to increase, applicable central bank interest rates, which could increase the costs required to obtain debt financing in the future or refinance current indebtedness. In addition, higher bond yields could result in increased return expectations for solar and battery storage projects, which would result in lower sale prices. In the event that suitable funding is unavailable, our customers may be unable to pay for products they have agreed to purchase. It may also be difficult to collect payments from customers facing liquidity challenges due to either customer defaults or financial institution defaults on project loans. Unfavorable credit markets may impede our expansion plans and materially and adversely affect our results of operations. The cash flow of a solar power or battery storage project may be derived from government-funded or government-backed FITs. Consequently, the availability and cost of funding solar and battery storage projects is determined in part based on the perceived sovereign credit risk of the country where a particular project is located.

In light of the uncertainty in the global credit and lending environment, we cannot make assurances that financial institutions will continue to offer funding to solar and battery storage project developers at reasonable costs. An increase in interest rates or a decrease in funding of capital projects within the global financial market could make it difficult to fund solar power and battery storage systems and potentially reduce the demand for solar modules and battery storage systems and/or reduce the average selling prices for solar modules and battery storage systems, which may materially and adversely affect our business, results of operations, financial condition and prospects.

Our future success depends partly on our ability to expand the development pipeline of our energy business in several key markets, which exposes us to a number of risks and uncertainties.

Historically, our sales of modules, solar system kits, and other services have accounted for the majority of our net revenues. We have, in recent years, increased our investment in our energy business, which primarily consists of solar power and battery storage project development and sale, O&M and asset management services, and sale of electricity generated by our solar power systems.

While we plan to continue to monetize our current portfolio of solar and battery storage projects in operation, we also intend to grow our energy business by developing and selling or operating more solar and battery storage projects that we develop. As we do, we will be increasingly exposed to the risks associated with these activities. Further, our future success largely depends on our ability to expand our solar power and battery storage project development pipeline. The risks and uncertainties associated with our energy business, and our ability to expand our solar power and battery storage project development pipeline, include:

- the uncertainty of being able to sell the projects, receive full payment for them upon completion, or receive payment in a timely manner;
- the need to raise significant additional funds to develop greenfield or purchase late stage solar and battery storage projects, which we may be unable to obtain on commercially reasonable terms or at all;
- delays and cost overruns as a result of a number of factors, many of which are beyond our control, including construction and procurement price inflation, delays in regulatory approvals, grid connection, supply chain of our suppliers or availability of components, construction and installation, and customer acceptance testing;
- delays or denial of required regulatory approvals by relevant government authorities, as a result of, among others, poor management of permitting process, including lack of resources and opaqueness of administrative measures;
- diversion of significant management attention and other resources; and
- failure to execute our project development pipeline expansion plan effectively.

If we are unable to successfully expand our energy business, and, in particular, our solar and battery storage project development pipeline, we may be unable to expand our business, maintain our competitive position, improve our profitability and generate cash flows.

Governments may revise, reduce or eliminate incentives and policy support schemes for solar and battery storage power, which could cause demand for our products to decline.

Historically, the market for on-grid applications, where solar power supplements the electricity a customer purchases from the utility network or sells to a utility under a FIT, depends largely on the availability and size of government subsidy programs and economic incentives. Until recently, the cost of solar power exceeded retail electricity rates in many locations. Government incentives vary by geographic market. Governments in many countries provided incentives in the form of FITs, rebates, tax credits, renewable portfolio standards, auctions for Contracts for Difference (“CFDs”), Feed-in Premium (“FIP”) and other incentives. These governments implemented mandates to end-users, distributors, system integrators and manufacturers of solar power products to promote the use of solar energy in on-grid applications and to reduce dependency on other forms of energy. However, these government mandates and economic incentives in many markets either have been or are scheduled to be reduced or eliminated altogether, and it is likely that eventually incentives for solar and alternative energy technologies will be phased out completely. Over the past few years, the cost of solar energy has generally declined, and the industry has become less dependent on government incentives. However, governments in some of our largest markets have expressed their intention to continue supporting various forms of “green” energies, including solar power, as part of broader policies towards the reduction of carbon emissions. The governments in many of our largest markets, including the United States and a number of the states of the European Union (including without limitation, Italy, France, Germany, Spain and Poland) continue to provide incentives and policy support schemes for investments in solar power and energy storage that will directly benefit the solar and energy storage industry.

In the United States, renewable energy projects currently benefit from various federal, state and local governmental incentives, such as ITCs, PTCs and Renewable Portfolio Standards (“RPS”) programs, accelerated tax depreciation, and other incentives provided for under the Inflation Reduction Act of 2022 (“IRA”), signed into law on August 16, 2022. The provisions of the IRA are intended to, among other things, incentivize domestic clean energy investment, manufacturing and production. The IRA includes provisions that provide incentives for clean energy through enhancement of the Investment Tax Credit (“ITC”) program, enablement of solar energy projects to also utilize the Production Tax Credit (“PTC”) program and availability of advanced manufacturing tax production credit pursuant to Section 45X of the Internal Revenue Code for solar modules and solar module components manufactured in the United States and sold to third parties. Such credit, which may be refundable or transferable to a third party, is available through 2032, subject to phase down beginning in 2030. Under the current legislative framework, most solar and energy storage projects are expected to qualify for the PTCs or ITCs at least through the end of 2032. The IRA provisions is further expected to expand the ITC to include stand-alone energy storage projects and introduce the ability of asset owners to transfer tax credits created under the IRA to third parties, which is expected to help address the lack of sufficient tax equity capacity. We view the enactment of the IRA as favorable for the overall business climate for solar and battery storage industry, however, we are continuing to evaluate the overall impact and applicability of the IRA to our current and planned business and the markets in which we seek to sell our products and services.

As to Europe, a number of European countries (notably, Germany, France, Italy, Spain and Poland) continue to support realization of solar projects through incentive schemes and auctions, with additional limitations and regulations on agricultural land as compared to industrial and commercial zones, and the enactment of new laws in order to simplify the permitting process and enhance administrative resources to promote renewable energy sources. The European Union is in the process of revising the Renewable Energy Directive that may provide additional support for solar and energy storage development, though the final outcome of these discussions is uncertain. As to Japan, new FIP scheme has been effectively implemented in April 2022. This new scheme ensures investment incentives for power producers by allowing them to receive premium based on the unit price in addition to the sales revenue from the transactions at the power exchange or through the power purchase agreements, and such premium is calculated by deducting reference price based on the market price from the base price. We believe that the near-term growth of the market partially depends on the availability and size of such government incentives.

While solar and battery storage projects may continue to offer attractive internal rates of return, it is unlikely that these rates will be as high as they were in the past. If internal rates of return fall below an acceptable rate for project investors, and governments continue to reduce or eliminate incentives for solar and battery storage power, this may cause a decrease in demand and considerable downward pressure on solar systems and therefore negatively impact both solar module prices and the value of our solar and battery storage projects. The reduction, modification or elimination of government incentives in one or more of our markets could therefore materially and adversely affect the growth of such markets or result in increased price competition, either of which could cause our revenues to decline and harm our financial results.

Imposition of antidumping and countervailing duty orders or safeguard measures in one or more markets may result in additional costs to our customers, which could materially or adversely affect our business, results of operations, financial conditions and future prospects.

We have been, and may be in the future, subject to the imposition of antidumping and countervailing duty orders or safeguard measures in one or more of the markets in which we sell our products. In the past, we were subject to the imposition of antidumping and countervailing duty orders and safeguard measures in the U.S., the EU, and Canada and have, as a result, been party to lengthy proceedings related thereto. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings.” The U.S., the EU, the U.K. and Canada are important markets for us. Ongoing proceedings relating to past, and the imposition of any new, antidumping and countervailing duty orders or safeguard measures in these markets may result in additional costs to us and/or our customers, which may materially and adversely affect our business, results of operations, financial conditions and future prospects.

General global economic conditions may have an adverse impact on our operating performance and results of operations.

The demand for solar power and battery storage products and services is influenced by macroeconomic factors, such as global economic conditions (e.g. interest rates, foreign exchange rates and inflation), demand for electricity, supply and prices of other energy products, such as oil, coal and natural gas, as well as government regulations and policies concerning the electric utility industry, clean and other alternative energy industries and the environment. There can be no assurance that we will be able to recover any increase in our costs as a result of recent inflationary pressures, by increasing prices, which in turn would increase our operating costs. As a result of global economic conditions, some governments may implement measures that reduce the FITs and other incentives designed to benefit the solar industry. A decrease in solar power tariffs or wholesale electricity in many markets placed downward pressure on the price of solar and battery storage systems in those and other markets. In addition, reductions in oil and coal prices may reduce the demand for and the prices of solar power and battery storage products and services. Our growth and profitability depend on the demand for and the prices of solar power products and services. If we experience negative market and industry conditions and demand for solar and battery storage projects and solar power and battery storage products and services weakens as a result, our business and results of operations may be adversely affected.

Our project development and construction activities may not be successful, projects under development may not receive required permits, property rights, EPC agreements, interconnection and transmission arrangements, and financing or construction of projects may not commence or continue as scheduled, all of which could increase our costs, delay or cancel a project, and have a material adverse effect on our revenue and profitability.

The development and construction of solar and battery storage projects involve known and unknown risks, many of which are not under our sole control. For example, we may be required to invest significant amounts of money for land and interconnection rights, preliminary engineering and permitting and may incur legal and other expenses before we can determine whether a project is feasible; we may also need to engage and rely on third parties including, but not limited to, contractors and consultants. Success in developing a particular project is contingent upon, among other things:

- securing land rights and related permits, including satisfactory environmental assessments;
- receipt of required land use and construction permits and approvals;
- receipt of rights to interconnect to the electric grid;
- availability of transmission capacity, potential upgrade costs to the transmission grid and other system constraints;
- payment of interconnection and other deposits (some of which are non-refundable);
- negotiation of satisfactory EPC agreements;
- solvency or financial conditions of our suppliers, EPC contractors or other third parties that we engage;
- obtaining construction financing, including debt, equity and tax credits; and
- timely and satisfactory execution and performance by the third parties that we engage.

In addition, successful completion of a particular project may be adversely affected by numerous factors, including:

- changes in laws, regulations and policies and shifts in trade barriers and remedies, especially tariffs;
- delays in obtaining and maintaining required governmental permits and approvals;
- compliance with domestic content and labor requirements;
- potential challenges from local residents, environmental organizations, and others who may not support the project;
- unforeseen engineering problems; subsurface land conditions; construction delays; cost over-runs; labor, equipment and materials supply shortages or disruptions (including labor strikes);
- failure to enter into PPAs on terms favorable to us, or at all;
- additional complexities when conducting project development or construction activities in foreign jurisdictions, including compliance with applicable U.S. or local laws and customs; and
- force majeure events, including adverse weather conditions, pandemics, supply chain disruptions, hostilities and other events beyond our control.

If we are unable to complete the development of a solar power and battery storage project or we fail to meet any agreed upon system level capacity or energy output guarantees or warranties or other contract terms, or our projects cause grid interference or other damage, the EPC, the PPA or other agreements related to the project may, depending on the specific terms of the agreements, be terminated and/or we may be subject to significant damages, penalties and other obligations relating to the project, including obligations to repair, replace or supplement materials for the project. If a third-party EPC contractor is terminated or resigns, we may be forced to take on additional risk, such as cost inflation and other cost increase that would otherwise be covered by third-party EPC contractor and responsibilities associated with the construction. No assurances can be given that disputes with EPC contractors will not arise in the future. Any of these events may materially and adversely affect our business, results of operations and financial conditions.

We may enter into fixed-price EPC agreements in which we act as the general contractor for our customers in connection with the installation of their solar power and battery storage systems. All essential costs are estimated at the time of entering into the EPC agreement for a particular project, and these costs are reflected in the overall fixed price that we charge our customers for the project. These cost estimates are preliminary and may or may not be covered by contracts between us and the subcontractors, suppliers and other parties involved in the project.

In addition, we require qualified, licensed subcontractors to install most of our solar power and battery storage systems. Shortages of components (which may be attributable to the shortage of raw materials or components), skilled labor, or inability to obtain regulatory approvals and operating permits could significantly delay a project or otherwise increase our costs. Should miscalculations in planning a project occur, including those due to unexpected increases in commodity prices or labor costs, or delays in execution occur and we are unable to increase the EPC sales price commensurately, we may not achieve our expected margin or our results of operations may be adversely affected.

Developing and operating solar and battery storage projects exposes us to risks different from those related to producing solar modules.

The development of solar and battery storage projects can take many months or years to complete and may be delayed for reasons beyond our control. There can be no assurance that the projects can be completed within the time or at the costs projected. Any such delays or cost overruns or the inability to obtain such approvals or to reach such agreements on acceptable terms could negatively affect the returns from any proposed or current solar and battery storage projects. It often requires us to make significant up-front payments for, among other things, land rights, interconnection work and permitting in advance of commencing construction, and revenue from these projects may not be recognized for several additional months following contract signing. Any inability or significant delays in entering into sales contracts with customers after making such up-front payments could adversely affect our business and results of operations. Furthermore, we may become constrained in our ability to simultaneously fund our other business operations and invest in other projects.

In contrast to producing solar modules, developing solar and battery storage projects requires more management attention to negotiate the terms of our engagement and monitor the progress of the projects which may divert management's attention from other matters. Our revenue and liquidity may be adversely affected to the extent the market for solar and battery storage projects weakens or we are not able to successfully complete the customer acceptance testing due to technical difficulties, equipment failure, or adverse weather, and we are unable to sell our solar and battery storage projects at prices and on terms and timing that are acceptable to us.

Our energy business also includes operating solar and battery storage projects and selling electricity to the local or national grid or other power purchasers. As a result, we are subject to a variety of risks associated with intense market competition, changing regulations and policies, insufficient demand for solar or battery storage, technological advancements and the failure of our power generation facilities.

We own a 70% stake in CSFS Fund I, a closed-ended, real-estate reserved alternative investment fund in Italy. We sold 30% of CSFS Fund I's preferred units to a third-party investor in 2022. We also currently own a 15% stake in the Canadian Solar Infrastructure Fund, Inc. ("CSIF", TSE: 9284), the largest Japanese infrastructure fund listed on the Tokyo Stock Exchange since 2017. By creating these and similar funds, we are subject to a variety of risks and regulations that substantially differ from the risks the rest of our businesses are subject to, such as the risk that the funds may not be deployed successfully, may experience investor withdrawal or liquidation with limited notice or penalty, or may not generate a sufficient rate of return to satisfy fund investors. If we are unable to consistently deliver quality and consistent returns, it may impact our ability to attract capital and continue holding the assets acquired by the funds. We may also suffer reputational damage if our funds do not perform in-line with investor expectations. Our fund partners and investors may have interests that are different from ours which may result in conflicting views as to the conduct and management of the investments. Any disagreements with our partners or investors could adversely affect our business and results of operations.

We face a number of risks involving PPAs and project-level financing arrangements, including failure or delay in entering into PPAs, defaults by counterparties and contingent contractual terms such as price adjustment, termination, buy-out, acceleration and other clauses, all of which could materially and adversely affect our energy business, financial condition, results of operations and cash flows.

We may not be able to enter into PPAs for our solar and battery storage projects due to intense competition, increased supply of electricity from other sources, reduction in wholesale electricity prices, changes in government policies or other factors. There is a limited pool of potential buyers for electricity generated by our solar power plants since the transmission and distribution of electricity is either monopolized or highly concentrated in most jurisdictions. The willingness of buyers to purchase electricity from an independent power producer may be based on a number of factors and not solely on pricing and surety of supply. Failure to enter into PPAs on terms favorable to us, or at all, would negatively impact our revenue and our decisions regarding the development of additional power plants. We may experience delays in entering into PPAs for some of our solar and battery storage projects or may not be able to replace an expiring PPA with a contract on equivalent terms and conditions, or otherwise at prices that permit operation of the related facility on a profitable basis. Any delay in entering into PPAs may adversely affect our ability to finance project construction and to enjoy the cash flows generated by such projects. If we are unable to replace an expiring PPA with an acceptable new PPA, the affected site may temporarily or permanently cease operations, or could be exposed to more uncertain merchant or wholesale electricity pricing, which could materially and adversely affect our financial condition, results of operations and cash flows.

The electric power generated by our solar and battery storage projects will generally be sold under long-term PPAs with public utilities, licensed suppliers, corporate offtakers, and commercial, industrial or government end users. Despite possible future alternatives, we expect a substantial number of our future projects to also have long-term PPAs or similar offtake arrangements such as FIT programs. If, for any reason, any of the purchasers of power under these contracts are unable or unwilling to fulfill their related contractual obligations, they refuse to accept delivery of the power delivered thereunder or they otherwise terminate them prior to their expiration, our assets, liabilities, business, financial condition, results of operations and cash flows could be materially and adversely affected. Further, to the extent any of our power purchasers are, or are controlled by, governmental entities, our facilities may be subject to legislative or other political action that may impair their contractual performance or contain contractual remedies that do not provide adequate compensation in the event of a counterparty default.

Some of our PPAs are subject to price adjustments over time. If the price under any of our PPAs is reduced below a level that makes a project economically viable, our financial conditions, cash flow and results of operations could be materially and adversely affected. Some inflation-based price adjustment is only done yearly and consequently may not allow us to pass on the additional costs in a timely manner, if at all. Further, some of our long-term PPAs do not include inflation-based price increases. Certain of the PPAs for our own projects and those for projects that we have acquired and may acquire in the future contain or may contain provisions that allow the offtake purchaser to terminate or buy out the project or require us to pay liquidated damages upon the occurrence of certain events. If these provisions are exercised, our financial condition, results of operations and cash flows could be materially and adversely affected. To the extent the output of a project is not fully subject to PPAs, electricity generated by our solar power systems will be exposed to merchant price risk. Additionally, certain of the project-level financing arrangements for projects allow, and certain of the projects that we may acquire in the future may allow, the lenders or investors to accelerate the repayment of the financing arrangement in the event that the related PPA is terminated or if certain operating thresholds or performance measures are not achieved within specified time periods. Certain of our PPAs and project-level financing arrangements include, and in the future may include, provisions that would permit the counterparty to terminate the contract or accelerate maturity in the event we own, directly or indirectly, less than 50% of the combined voting power or, in some cases, if we cease to be the majority owner, directly or indirectly, of the applicable project subsidiary. The termination of any of our PPAs or the acceleration of the maturity of any of our financing arrangements as a result of a change-in-control event could have a material adverse effect on our financial condition, results of operations and cash flows.

Oversupply of polysilicon, solar wafers, cells and modules may cause substantial downward pressure on the prices of our products and reduce our revenues and earnings.

Silicon production capacity has expanded rapidly in recent years. As a result of this expansion, coupled with the global economic downturn, the solar industry has experienced an oversupply of high-purity silicon since the beginning of 2009. This has contributed to an oversupply of solar wafers, cells and modules and resulted in substantial downward pressure on prices throughout the value chain. The average selling price of our solar modules decreased from \$0.29 per watt in 2019 to \$0.25 per watt in 2020, and subsequently increased to \$0.28 per watt in 2021 and \$0.30 per watt in 2022. Although we believe that there is a relative balance between capacity and demand at low prices due to industry consolidation, increases in solar module production in excess of market demand may result in further downward pressure on the price of solar wafers, cells and modules, including our products. Increasing competition could also result in us losing sales or market share.

On the other hand, demand for solar products remains strong and may continue to increase, driven by various factors such as the efforts being made by major economies toward clean, renewable energy sources and decarbonization, which could result in increase in the costs of and difficulties in sourcing raw materials to support the increased production levels due to capacity addition limitations. As a result, we may not be able to keep up with fast growth in the demand for our solar products. Accordingly, due to fluctuations in the supply and price of solar power products throughout the value chain, we may not be able to, on an ongoing basis, procure silicon, wafers and cells at reasonable costs if any of the above risks materializes. If, on an ongoing basis, we are unable to procure silicon, solar wafers and solar cells at reasonable prices or mark up the price of our solar modules to cover our manufacturing and operating costs, our revenues and margins will be adversely impacted, either due to higher costs compared to our competitors or due to further write-downs of inventory, or both. In addition, our market share could decline if our competitors are able to price their products more competitively.

We are subject to numerous laws, regulations and policies at the national, regional and local levels of government in the markets where we do business. Any changes to these laws, regulations and policies may present legal, technical, regulatory and economic barriers to the development, construction, purchase and use of solar power and battery storage products, solar and battery storage projects and solar electricity, which may significantly reduce demand for our products and services or otherwise adversely affect our financial performance.

We are subject to a variety of laws and regulations in the markets where we do business, some of which may conflict with each other and all of which are subject to change. These laws and regulations include energy regulations, export and import restrictions, tax laws and regulations, environmental regulations, labor laws, supply chain laws and regulations and other government requirements, approvals, permits and licenses. We also face trade barriers and trade remedies such as export requirements, tariffs, taxes and other restrictions and expenses, including antidumping and countervailing duty orders, which could increase the prices of our products and make us less competitive in some countries. See “—Imposition of antidumping and countervailing duty orders or safeguard measures in one or more markets may result in additional costs to our customers, which could materially or adversely affect our business, results of operations, financial conditions and future prospects.”

In the countries where we do business, the market for solar power and battery storage products, solar and battery storage projects and solar electricity is heavily influenced by national, state and local government regulations and policies concerning the electric utility industry, as well as policies disseminated by electric utilities. These regulations and policies often relate to electricity pricing and technical interconnection of customer-owned electricity generation, and could deter further investment in the research and development of alternative energy sources as well as customer purchases of solar power and battery storage technology, which could result in a significant reduction in the potential demand for our solar power and battery storage products, solar and battery storage projects and solar electricity.

In our CSI Solar business (which includes sales of solar system kit, battery storage solutions, and other EPC, materials, components and services), we expect that our solar power and battery storage products and their installation will continue to be subject to national, state and local regulations and policies relating to safety, utility interconnection and metering, construction, environmental protection, and other related matters. Any new regulations or policies pertaining to our solar power and battery storage products may result in significant additional expenses to us, our resellers and customers, which could cause a significant reduction in demand for our solar power and battery storage products.

In our energy business, we are subject to numerous national, regional and local laws and regulations. Changes in applicable energy laws or regulations, or in the interpretations of these laws and regulations, could result in increased compliance costs or the need for additional capital expenditures. If we fail to comply with these requirements, we could also be subject to civil or criminal liability and the imposition of fines. Further, national, regional or local regulations and policies could be changed to provide for new rate programs that undermine the economic returns for both new and existing projects by charging additional, non-negotiable fixed or demand charges or other fees or reductions in the number of projects allowed under net metering policies. National, regional or local government energy policies, law and regulation supporting the creation of organized merchant or wholesale electricity markets are currently, and may continue to be, subject to challenges, modifications and restructuring proposals, which may result in limitations on the commercial strategies available to us for the sale of our power. For example, reforms to the energy regulatory regime (primarily regarding the power industry law), which are proposed by the Mexican government and are currently under review by the Mexican courts seek to give Mexico's national power company, the Federal Electricity Commission (“CFE”), preferential status in energy dispatch over private firms. Clean energy proponents argue that such reforms would hinder free competition and unduly benefit the CFE, and they continue to file constitutional challenges, called amparos, against such reforms, which are pending resolution before the Mexican courts.

Regulatory changes in a jurisdiction where we are developing a solar and battery storage project may make the continued development of the project infeasible or economically disadvantageous and any expenditure that we have previously made on the project may be wholly or partially written off. Any of these changes could significantly increase the regulatory related compliance and other expenses incurred by the projects and could significantly reduce or entirely eliminate any potential revenues that can be generated by one or more of the projects or result in significant additional expenses to us, our off-takers and customers, which could materially and adversely affect our business, financial condition, results of operations and cash flows.

We also face regulatory risks imposed by various transmission providers and operators, including regional transmission operators and independent system operators, and their corresponding market rules. These regulations may contain provisions that limit access to the transmission grid or allocate scarce transmission capacity in a particular manner, which could materially and adversely affect our business, financial condition, results of operations and cash flows.

We are also subject to the Foreign Corrupt Practices Act of 1977, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and other anti-corruption laws that prohibit companies and their employees and third-party intermediaries from authorizing, offering or providing, directly or indirectly, improper payments or benefits to foreign government officials, political parties and private-sector recipients for the purpose of obtaining or retaining business in countries in which we conduct activities. We may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities in the course of our business (for example, to obtain approvals, permits and licenses from applicable government authorities and to sell power to government-owned entities). We would face significant liabilities if we failed to comply with these laws and we could be held liable for the illegal activities of our employees, representatives, contractors, partners, and agents, even if we did not authorize such activities. Any violation of the FCPA or other applicable anticorruption laws could also result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions, which could have a material adverse effect on our business, financial condition, results of operation, cash flows and reputation. In addition, responding to any enforcement action may result in the diversion of management's attention and resources, significant defense costs and other professional fees.

Because the markets in which we compete are highly competitive and evolving quickly, because many of our competitors have greater resources than we do or are more adaptive, and because we have a limited track record in our energy business, we may not be able to compete successfully and we may not be able to maintain or increase our market share.

In our CSI Solar business, we face intense competition from a large number of competitors, including non-China-based companies such as First Solar, Inc., or First Solar, and China-based companies such as LONGI Green Energy Technology Co. Ltd., or Longi, Trina Solar Limited, or Trina, JinkoSolar Holding Co., Limited, or Jinko, JA Solar Co., Limited, or JA Solar, and Hanwha Q Cells Co., Ltd., or Hanwha Q Cells. Some of our competitors are developing or are currently producing products based on new solar module and battery storage technologies that may ultimately have costs similar to or lower than our projected costs. These include products based on thin film PV technology, which requires either no silicon or significantly less silicon to produce than crystalline silicon solar modules, such as the ones that we produce, and is less susceptible to increases in silicon costs. To effectively compete, our products and production capacity are undergoing continuous transformation, which may risk missing monocrystalline module market opportunities and losing market share and in turn negatively affect our performance. For example, while crystalline silicon cell modules have become the market mainstream, our ongoing upgrade to N-type and TOPCon technology, which is focused on further improving the photoelectric conversion efficiency and reducing the manufacturing cost, is susceptible to various related risks. Our judgment of the development trend of technology and products may prove inaccurate, and we may fail to invest sufficiently in research and development in the technology with the most market potential. Consequently, we may be exposed to the risk of technological backwardness.

Furthermore, some of our competitors have longer operating histories, greater name and brand recognition, access to larger customer bases, greater resources and significantly greater economies of scale than we do. In addition, some of our competitors may have stronger relationships or may enter into exclusive relationships with some of the key distributors or system integrators to whom we sell our products. As a result, they may be able to respond more quickly to changing customer demands or devote greater resources to the development, promotion and sales of their products. Some of our competitors have more diversified product offerings, which may better position them to withstand a decline in demand for solar power and battery storage products. Some of our competitors are more vertically integrated than we are, from upstream silicon wafer manufacturing to solar power system integration. This may allow them to capture higher margins or have lower costs. In addition, new competitors or alliances among existing competitors could emerge and rapidly acquire significant market share. If we fail to compete successfully, our business will suffer and we may not be able to maintain or increase our market share.

In our energy business, we compete in a more diversified and complicated landscape since the commercial and regulatory environments for solar and battery storage project development and operation vary significantly from region to region and country to country. Our primary competitors are local and international developers and operators of solar and battery storage projects. Some of our competitors may have advantages over us in terms of greater experience or resources in the operation, capital, financing, technical support and management of solar and battery storage projects, in any particular markets or in general.

We have a global footprint and develop solar and battery storage projects primarily in the U.S., Canada, Japan, China, the EU, the U.K., Brazil, Mexico, Chile, Colombia, Australia and Taiwan. There is no guarantee that we can compete successfully in the markets in which we currently operate or the ones we plan to enter in the future. For example, in certain of our target markets, such as China, state-owned and private companies have emerged to take advantage of the significant market opportunity created by attractive financial incentives and favorable regulatory environment provided by the governments. State-owned companies may have stronger relationships with local governments in certain regions and private companies may be more focused and experienced in developing solar and battery storage projects in the markets where we compete. Accordingly, we need to continue to be able to compete against both state-owned and private companies in these markets.

We also provide battery storage and system solutions, EPC, O&M and asset management services, and face intense competition from other service providers in those markets.

Our business also includes electricity generation and sale, we believe that our primary competitors in the electricity generation markets in which we operate are the incumbent utilities that supply energy to our potential customers under highly regulated rate and tariff structures. We compete with these conventional utilities primarily based on price, predictability of price, reliability of delivery and the ease with which customers can switch to electricity generated by or discharged from our solar and battery storage power projects.

As the solar power and renewable energy industry grows and evolves, we will also face new competitors who are not currently in the market. Our failure to adapt to changing market conditions and to compete successfully with existing or new competitors will limit our growth and will have a material adverse effect on our business and prospects.

We face risks associated with the marketing, distribution and sale of our solar power and battery storage products and services internationally.

The international marketing, sale, distribution and delivery of our products and services expose us to a number of risks, including:

- fluctuating sources of revenues;
- difficulties in staffing and managing overseas operations;
- fluctuations in foreign currency exchange rates;
- differing regulatory and tax regimes across different markets;
- the increased cost of understanding local markets and trends and developing and maintaining an effective marketing and distribution presence in various countries;
- the difficulty of providing customer service and support in various countries;
- the difficulty of managing our sales channels effectively as we expand beyond distributors to include direct sales to systems integrators, end users and installers;
- the difficulty of managing the development, construction and sale of our solar and battery storage projects on a timely and profitable basis as a result of technical difficulties, commercial disputes with our customers and changes in regulations, among other factors;
- the difficulties and costs of complying with the different commercial, legal and regulatory requirements in the overseas markets in which we operate;
- any failure to develop appropriate risk management and internal control structures tailored to overseas operations;
- any inability to obtain, maintain or enforce intellectual property rights;
- any unanticipated changes in prevailing economic conditions and regulatory requirements; and
- any trade barriers such as export requirements, tariffs, taxes and other restrictions and expenses, which could increase the prices of our products and make us less competitive in some countries.

If we are unable to effectively manage these risks, our ability to expand our business abroad could suffer.

Our revenue sources have fluctuated significantly over recent years. For example, in 2008, 89.5% of our revenues were attributable to Europe, while only 4.6% and 5.9% were attributable to the Americas and to Asia and other regions, respectively. However, in 2020, Europe and other regions contributed 18.3% while the Americas contributed 35.1% and Asia contributed 46.6% of our revenues; in 2021, Europe and other regions contributed 16.3% while the Americas contributed 43.2% and Asia contributed 40.5% of our revenues; in 2022, Europe and other regions contributed 25.9% while the Americas contributed 37.4% and Asia contributed 36.7% of our revenues. As we shift the focus of our operations between different regions of the world, we have limited time to prepare for and address the risks identified above. Furthermore, some of these risks, such as currency fluctuations, will increase as our revenue contribution from certain global regions becomes more prominent. This may adversely influence our financial performance.

We have in the past, and may in the future, implement initiatives designed to manage our manufacturing capacity to meet demand efficiently. We may fail to realize the full benefits of, and could incur significant costs relating to, any such initiatives, which could materially adversely affect our business, financial condition, and results of operations.

We have implemented several initiatives designed to manage our manufacturing capacity to meet demand efficiently. Our solar module, cell, solar wafer and ingot total annual production capacity was 32.2 GW, 19.8 GW, 20.0 GW and 20.4 GW, respectively, as of December 31, 2022. We target to expand these annual capacities to be 75.0 GW, 60.0 GW, 50.0 GW and 50.4 GW, respectively, by March 2024, of which 50.0 GW, 50.0 GW, 35.0 GW and 20.4 GW, respectively, is targeted for December 2023. In January 2023, we entered into an investment agreement with the municipal government of Yangzhou City in Jiangsu Province, China. Under this agreement, we plan to add vertically integrated high efficiency wafer, cell and module capacity, as well as battery system manufacturing capacity, in Yangzhou's clean energy manufacturing industrial park. The project plan will be carried out in three phases, with phase I being 14 GW of annual wafer and cell capacity. Phase I is expected to commence production in the second half of 2023, while phases II and III are subject to market conditions and our assessments.

We expect to further increase the level of vertical integration of our manufacturing capacity and better control our costs, technology and product quality. As a result, our pricing power and margins can be further improved. We will continue to evaluate opportunities to reduce our manufacturing costs and may implement additional initiatives to increase our manufacturing capacity. However, we cannot assure you that we will realize the cost savings and productivity improvements we expect as a result of these or any future initiatives. Future initiatives to build, transfer or consolidate manufacturing operations could also involve significant start-up or qualification costs for new or repurposed facilities. The failure to realize the full benefits of, or the incurrence of significant costs relating to, these initiatives could materially adversely affect our business, financial condition, and results of operations.

Our future business depends in part on our ability to make strategic acquisitions, investments and divestitures and to establish and maintain strategic relationships, and our failure to do so could have a material and adverse effect on our market penetration and revenue growth.

We frequently look for and evaluate opportunities to acquire other businesses, make strategic investments or establish strategic relationships with third parties to improve our market position or expand our products and services. When market conditions permit and opportunities arise, we may also consider divesting part of our current business to focus management attention and improve our operating efficiency. Investments, strategic acquisitions and relationships with third parties could subject us to a number of risks, including risks associated with integrating their personnel, operations, services, internal controls and financial reporting into our operations as well as the loss of control of operations that are material to our business. If we divest any material part of our business, particularly our upstream manufacturing business or downstream energy business through e.g. STAR Listing, we may not be able to benefit from our investment and experience associated with that part of the business and may be subject to intensified concentration risks with less flexibility to respond to market fluctuations. Moreover, it could be expensive to make strategic acquisitions, investments, divestitures and establish and maintain relationships, and we may be subject to the risk of non-performance by a counterparty, which may in turn lead to monetary losses that materially and adversely affect our business. Uncertainties with respect to the relatively new PRC regulations, including the Foreign Investment Law and the Implementation Rules of Foreign Investment Law, may also make it more difficult for us to pursue growth through acquisitions. See “—The rules and regulations in China can change quickly with little advance notice. Uncertainties with respect to the Chinese legal system, as well as changes in any government policies, laws and regulations, could adversely affect the overall economy in China or our industry, which could harm our business.” We cannot assure you that we will be able to successfully make strategic acquisitions and investments and successfully integrate them into our operations, or make strategic divestitures or establish strategic relationships with third parties that will prove to be effective for our business. Our inability to do so could materially and adversely affect our market penetration, our revenue growth and our profitability.

Our significant international operations expose us to a number of risks, including unfavorable political, regulatory, labor and tax conditions in the countries where we operate.

We intend to continue to extend our global reach and capture market share in various global markets. In doing so, we will be exposed to various risks, including political, regulatory, labor and tax risks. Any government policies that are unfavorable towards international trade, such as capital controls or tariffs, may affect the demand for our products and services, impact our competitive position, or prevent us from expanding globally. If any new tariffs, legislation, or regulations are implemented, or if existing trade agreements are renegotiated, such changes could adversely affect our business, financial condition, and results of operations. Many perceive globalization to be in retreat and protectionism on the rise, as evidenced by the United Kingdom's departure from the EU and the decisions of the U.S. Government to, among other actions, impose Section 301 and other tariffs on goods imported from China and renegotiate certain trade arrangements. Tensions have continued to escalate in 2022, in areas ranging from trade, national security and national and regional politics and have resulted in contentious punitive or retaliatory measures being imposed on businesses and individuals. The tensions surrounding international trade and potential government sanctions could negatively affect the overall economic, political and social conditions in the countries where we operate, which could adversely affect our business.

In addition, despite our zero tolerance of forced labor, whether in our own manufacturing facilities and throughout our supply chain, we may be subject to risks related to forced labor allegations. We monitor our manufacturing facilities, maintain an equal opportunity policy, prohibit discrimination of any kind, and follow the employment laws and regulations of the jurisdictions in which we operate. A set of challenges were imposed by the U.S. Customs and Border Protection ("CBP") in June 2021 through a Withhold Release Order ("WRO") pursuant to Section 307 of the Tariff Act of 1930 on products whose upstream silica-based products (such as polysilicon) are sourced, or are suspected of being sourced, from Hoshine Silicon Industry Co. Ltd. and its subsidiaries ("Hoshine"). On December 23, 2021, President Biden signed into law the Uyghur Forced Labor Prevention Act (the "UFLPA"), which went into effect on June 21, 2022 and creates forced labor-related import restrictions that apply more broadly than the WRO. Our solar modules imported into the U.S. contain polysilicon sourced from the Inner Mongolia, Hubei and Shaanxi provinces of China and Germany. Notwithstanding, there can be no assurance that we will not experience adverse consequences arising from the impact of these restrictions on our products and supply chain. If our products are seized, excluded or detained by the CBP due to the WRO or the UFLA, we will use our best effort to provide the requisite evidence to rebut the presumption of use of forced labor.

We cannot predict what additional actions the U.S. may adopt or what actions may be taken by other countries with regard to similar concerns. Our direct solar module sales to the U.S. market accounted for 14.8%, 15.5% and 17.5% of our total revenues in 2020, 2021 and 2022, respectively. If additional measures are imposed or other negotiated outcomes occur, our business, financial condition and results of operations could be adversely affected.

Sustained tensions between the United States and China could significantly undermine the stability of the global economy. In addition, geopolitical risks and associated military action may result in, among other things, global security issues, that may adversely affect international business and economic conditions, and economic sanctions which may impact the global economy. For example, the outbreak of hostilities between Russia and Ukraine in February 2022 led to global sanctions that have impacted the international economy and give rise to potential global security issues that may adversely affect international business and economic conditions. These recent events have also caused significant volatility in global equity and debt capital markets, which could trigger a severe contraction of liquidity in the global credit markets. If tensions increase among countries, there may be a material adverse effect on our international operations. Furthermore, we may need to make substantial investments in our overseas operations in order to attain longer-term sustainable returns. These investments could negatively impact our financial performance before sustainable returns are achieved.

The U.S. Department of Commerce's antidumping and countervailing duty anti-circumvention investigations and the extended safeguard measures in the United States could adversely affect us.

Canadian Solar's exports to the United States could be adversely impacted by (i) the possibility that the U.S. Department of Commerce (the "USDOC") could reach affirmative final determinations in its anti-circumvention investigations of crystalline silicon photovoltaic ("CSPV") cells and modules products from Thailand and/or Vietnam; and/or (ii) the U.S. Government's extension of the safeguard measures currently in place against imports of CSPV cells and modules.

On August 16, 2021, a group of anonymous entities calling itself the American Solar Manufacturers Against Chinese Circumvention (“A-SMACC”) requested that the USDOC initiate an anti-circumvention inquiry regarding CSPV products from Malaysia, Thailand, and Vietnam. A-SMACC alleged that certain CSPV products from Malaysia, Thailand, and Vietnam containing Chinese-origin components were circumventing the Solar 1 antidumping (“AD”) and countervailing duty (“CVD”) (together, the “AD/CVD”) orders on CSPV solar cells, whether or not assembled into modules, from the People’s Republic of China (“the Solar 1 China AD/CVD Orders”). Canadian Solar entered an appearance in the Thailand and Vietnam segments of these proceedings and requested that the USDOC reject A-SMACC’s petition as deficient. On November 10, 2021, the USDOC rejected A-SMACC’s request and declined to initiate an anti-circumvention inquiry.

On February 8, 2022, U.S. module producer Auxin Solar Inc. (“Auxin”) filed with the USDOC separate circumvention petitions on CSPV products from Cambodia, Malaysia, Thailand, and Vietnam. Canadian Solar entered an appearance in the Thailand and Vietnam segments of these proceedings and requested that the USDOC reject Auxin’s petition. On April 1, 2022, the USDOC initiated anti-circumvention inquiries on a country-wide basis with respect to all four countries. The USDOC selected Canadian Solar International Limited (“CSIL”) as a mandatory respondent for individual investigation in the Thailand circumvention proceedings. The Group is defending its interests in these proceedings.

U.S. law provides that the USDOC may find that circumvention exists when (among other factors) merchandise subject to an AD/CVD order is completed or assembled in third countries with the end result of AD/CVD duty avoidance. Specifically, with respect to the existing Solar 1 China AD/CVD Orders, the USDOC may find that (i) certain CSPV cells and/or modules produced in Thailand and/or Vietnam fall within the scope of the AD/CVD orders; and (ii) the collection of AD and/or CVD deposits (at *ad valorem* rates determined during the separate administrative reviews of the Solar 1 China AD/CVD Orders) are appropriate to prevent evasion of AD/CVD duties. The USDOC’s investigation examines, inter alia, whether (i) the production process in Thailand and Vietnam is “minor or insignificant”; and (ii) the value of the merchandise produced in China is a significant portion of the value of the product exported to the United States.

On December 8, 2022, USDOC reached preliminary, country-wide affirmative determinations with respect to all four countries subject to the inquiry: Cambodia, Malaysia, Thailand, and Vietnam. USDOC also made preliminary, company-specific affirmative determinations with respect to twenty-six (26) companies, including CSIL. USDOC is scheduled to issue final determinations on May 1, 2023.

Under the USDOC’s regulations, an affirmative circumvention determination typically imposes AD/CVD liability from the date of initiation (here, April 1, 2022). Notwithstanding, the USDOC has published a final rule that will delay AD/CVD liability for CSIL’s exports from Thailand (and also Vietnam) in these solar circumvention proceedings (the “Solar Moratorium”) which mitigates possible adverse effects of the anti-circumvention investigations. On June 6, 2022, President Biden issued Proclamation 10414, declaring an emergency with respect to U.S. energy generation, and waiving solar circumvention AD/CVD requirements during the period of emergency (currently set to expire on June 6, 2024). On September 16, 2022, the USDOC published a final rule implementing the Solar Moratorium.

In its December 8, 2022 affirmative preliminary determinations, the USDOC confirmed that it will not require AD/CVD cash deposits for entries subject to the circumvention investigations for the duration of the emergency declared by President Biden, even in the event that USDOC reaches final affirmative determinations, so long as (a) imports occur on or before June 6, 2024 (or until the temporary duty moratorium is otherwise terminated), and (b) the imported solar products are assembled into solar energy projects by December 3, 2024 (or within 180 days from the termination of the emergency). The USDOC also implemented a certification mechanism for exporters and importers to demonstrate that merchandise is not subject to circumvention AD/CVD requirements in light of (i) the Solar Moratorium, or (ii) limited reliance on Chinese-origin components.

In its affirmative preliminary determinations, the USDOC also indicated that it intends to impose circumvention cash deposit requirements as follows: (1) for exporters of the solar cells or solar modules that have a company-specific cash deposit rate under the Solar 1 China AD/CVD orders, the cash deposit rate will be the company-specific AD and/or CVD cash deposit rate established for that company in the most recently-completed segment of the solar cells proceedings (e.g., an administrative review); (2) for exporters of the solar cells or solar modules that do not have a company-specific cash deposit rate under the Solar 1 China AD/CVD orders, the cash deposit rate will be the company-specific cash deposit rate established under the Solar 1 orders for the company that exported the wafers to the producer/exporter in the relevant third country (i.e., Cambodia, Malaysia, Thailand or Vietnam) that were incorporated in the imported solar cells or solar modules; and (3) if neither the exporter of the solar cells or solar modules nor the exporter of the wafers described in item (2) above has a company-specific cash deposit rate, the AD cash deposit rate will be the China-wide rate (238.95)%, and the CVD cash deposit rate will be the “All-Others” rate (15.24)%. Several of the Group’s entities have been subject to USDOC Solar 1 administrative reviews and are subject to the resulting cash deposit rates.

Depending on the nature of USDOC's final determination in the anti-circumvention investigations, including the scope of the certifications and final circumvention finding and USDOC's continued implementation of Proclamation 10414, the Group's exports from Thailand and Vietnam to the U.S. market could be treated as if they are of Chinese origin and therefore could become subject to potentially very high AD/CVD deposit rates. The Group produces a significant portion of its products from facilities in Thailand and Vietnam. As such, the application of AD/CVD duties to the Group's products produced in Thailand and Vietnam would adversely impact its ability to remain competitive in the U.S. market—one of the Group's main markets—and risk significant harm to its financial condition and operations.

In addition, the U.S. Government extended the solar safeguard measure for four years until February 6, 2026. The extended solar safeguard measure applies to nearly all U.S. imports of CSPV cells and modules, including imports from Thailand and Vietnam. The extended safeguard measure doubles the volume of the tariff-rate quota (TRQ) on imported CSPV cells to 5.0 gigawatts and maintains a tariff on imports of CSPV modules and above-quota CSPV cells, beginning at a rate of 14.75% ad valorem and declining annually by 0.25 percentage points to 14.50% in the sixth year, 14.25% in the seventh year, and 14.0% in the eighth year. The extended safeguard measure excludes bifacial panels. In addition, the extended safeguard measure no longer applies to imports of CSPV cells and modules from Canada, as a result of a memorandum of understanding between the United States and Canada. The extended safeguard measure could be subject to further revision and risk significant harm to the Group's financial condition and operations.

We face risks related to private securities litigation.

Canadian Solar Inc. and certain of our directors and executive officers were named as defendants in class action lawsuits in the U.S. and Canada alleging that our financial disclosures during 2009 and early 2010 were false or misleading and in violation of U.S. federal securities laws and Ontario securities laws, respectively. The lawsuits in the U.S. were consolidated into one class action, which was dismissed with prejudice by the district court in March 2013. The dismissal was subsequently affirmed by the circuit court in December 2013. In January 2015, the plaintiff in the class action lawsuit obtained an order for class certification in respect of certain claims for which he had obtained leave in September 2014 to assert the statutory cause of action for misrepresentation under the Ontario Securities Act, for certain negligent misrepresentation claims and for oppression remedy claims advanced under the *Canadian Business Corporations Act* (Canadian Solar Inc.'s governing corporate statute at the time). A settlement of the lawsuit in Canada was achieved and approved by the Ontario Superior Court of Justice on October 30, 2020. The settlement is not an admission of liability or wrongdoing by our company or any of the other defendants.

There is no guarantee that we will not become party to additional lawsuits. If we were involved in a class action suit, it could divert a significant amount of our management's attention and other resources from our business and operations and require us to incur significant expenses to defend the suit. In addition, we are generally obligated, to the extent permitted by law, to indemnify our directors and officers who are named defendants in these lawsuits. If we were to lose a lawsuit, we may be required to pay judgments or settlements and incur expenses in aggregate amounts that could have a material and adverse effect on our financial condition or results of operations.

Our quarterly operating results may fluctuate from period to period.

Our quarterly operating results may fluctuate from period to period based on a number of factors, including:

- the average selling prices of our solar power and battery storage products and services;
- the timing of completion of construction of our solar and battery storage projects;
- the timing and pricing of project sales;
- changes in payments from power purchasers of solar power plants already in operation;
- the rate and cost at which we are able to expand our internal production capacity;
- the availability and cost of solar wafers and cells from our suppliers and toll manufacturers;
- the availability and cost of raw materials, particularly high-purity silicon;
- changes in government incentive programs and regulations, particularly in our key and target markets;
- the unpredictable volume and timing of customer orders;
- the loss of one or more key customers or the significant reduction or postponement of orders;
- the availability and cost of external financing for on-grid and off-grid solar power and energy storage applications;

- acquisition, investment and offering costs;
- the timing of successful completion of customer acceptance testing of our solar and battery storage projects;
- geopolitical turmoil and natural disasters within any of the countries in which we operate;
- foreign currency fluctuations, particularly in Renminbi, Euros, Brazilian reals, South African rand, Canadian dollars, Japanese yen, Australian dollars, British pounds and Thai baht;
- our ability to establish and expand customer relationships;
- changes in our manufacturing costs;
- the timing of new products or technology introduced or announced by our competitors;
- fluctuations in electricity rates due to changes in fossil fuel prices or other factors;
- allowances for credit losses;
- inventory write-downs;
- impairment of property, plant and equipment;
- impairment of project assets;
- impairment of investments in affiliates;
- depreciation charges relating to under-utilized assets;
- share-based compensation expenses on performance-based share awards under our share incentive plan;
- income taxes;
- construction progress of solar and battery storage projects and related revenue recognition; and
- antidumping, countervailing and other duty costs and true-up charges

We base our planned operating expenses in part on our expectations of future revenues. A significant portion of our expenses will be fixed in the short-term. If our revenues for a particular quarter are lower than we expect, we may not be able to reduce our operating expenses proportionately, which would harm our operating results for the quarter. As a result, our results of operations may fluctuate from quarter to quarter and our interim and annual financial results may differ from our historical performance.

Fluctuations in exchange rates could adversely affect our business, including our financial condition and results of operations.

The majority of our sales in 2020, 2021 and 2022 were denominated in U.S. dollars, Renminbi and Euros, with the remainder in other currencies such as Brazilian reals, Japanese yen, South African rand, Australian dollars and British pounds. The majority of our costs and expenses in 2020, 2021 and 2022 were denominated in Renminbi and were primarily related to the sourcing of solar cells, silicon wafers and silicon, other raw materials, including metallic pastes, glass, aluminum frames, ethylene vinyl acetate ("EVA", an encapsulant used to seal the module), junction boxes, polymer back sheets, lithium iron phosphate battery cell, toll manufacturing fees, labor costs and local overhead expenses within the PRC. From time to time, we enter into loan arrangements with commercial banks that are denominated primarily in Renminbi, U.S. dollars, Japanese yen, Brazilian Reals and Euros. The majority of our cash and cash equivalents and restricted cash are denominated in Renminbi. Fluctuations in exchange rates, particularly between the U.S. dollars, Renminbi, Euros, Brazilian reals, South African rand, Canadian dollars, Japanese yen, Australian dollars, British pounds and Thai baht may result in foreign exchange gains or losses. We recorded net foreign exchange loss of \$64.8 million in 2020, net foreign exchange loss of \$47.2 million in 2021 and net foreign exchange gain of \$77.7 million in 2022.

The value of the Renminbi against the U.S. dollars, the Euros and other currencies is affected by, among other things, changes in China's political and economic conditions and China's foreign exchange policies. We cannot provide any assurances that the policy of the PRC government will not affect, or the manner in which it may affect the exchange rate between the Renminbi and the U.S. dollars or other foreign currencies in the future.

Since 2008, we have hedged part of our foreign currency exposures primarily against the U.S. dollars using foreign currency forward or option contracts. In addition to the requirement to provide collateral when entering into hedging contracts, there are notional limits on the size of the hedging transactions that we may enter into with any particular counterparty at any given time. While these contracts are intended to reduce the effects of fluctuations in foreign currency exchange rates, our hedging strategy does not mitigate the longer-term impacts of changes to foreign exchange rates. We do not enter into these contracts for trading purposes or speculation, and we believe all these contracts are entered into as hedges of underlying transactions. Nonetheless, these contracts involve costs and risks of their own in the form of transaction costs, credit requirements and counterparty risk. Also, the effectiveness of our hedging program may be limited due to cost effectiveness, cash management, exchange rate visibility and associated management judgment on exchange rate movement, and downside protection. We recorded a gain on change in fair value of foreign currency derivatives, net of \$51.2 million in 2020, a loss on change in fair value of foreign currency derivatives, net of \$22.8 million in 2021 and a loss on change in fair value of foreign currency derivative, net of \$40.5 million in 2022. These gains or losses on change in fair value of foreign currency derivatives, net are related to our hedging program. If our hedging program is not successful, or if we change our hedging activities in the future, we may experience significant unexpected expenses from fluctuations in exchange rates.

Volatility in foreign exchange rates will hamper, to some extent, our ability to plan our pricing strategy. To the extent that we are unable to pass along increased costs resulting from exchange rate fluctuations to our customers, our profitability may be adversely impacted. As a result, fluctuations in foreign currency exchange rates could have a material and adverse effect on our financial condition and results of operations.

A change in our effective tax rate can have a significant adverse impact on our business.

A number of factors may adversely impact our future effective tax rates, such as the jurisdictions in which our profits are determined to be earned and taxed; changes in the valuation of our deferred tax assets and liabilities; adjustments to provisional taxes upon finalization of various tax returns; adjustments to the interpretation of transfer pricing standards; changes in available tax credits; changes in stock-based compensation expenses; changes in tax laws or the interpretation of tax laws (e.g., in connection with fundamental U.S. international tax reform); changes in U.S. GAAP; and expiration of or the inability to renew tax rulings or tax holiday incentives. In particular, the Organization for Economic Co-operation and Development (“OECD”) is working on proposals for international tax reform as an extension of its Base Erosion and Profit Shifting project. The proposals are comprised in a two-pillar approach: Pillar One, which is focused on the re-allocation of some of the taxable profits of multinational enterprises to the markets where consumers are located; and Pillar Two, which is focused on establishing a global minimum corporate taxation rate. In June 2021, the finance ministers of the G7 nations announced an agreement on the principles of the two-pillar approach. Subsequently, in October 2021, the OECD/G20 Inclusive Framework announced that 136 countries and jurisdictions had joined an agreement on the two-pillar approach, including the establishment of a global minimum corporate tax rate of 15%. In December 2021, the OECD published detailed rules to assist in the implementation of Pillar Two. The G20 called for all the rules to enter into force at a global level by 2024, with some to be implemented in 2023. The impact of the reform on us will depend on implementation by the adhering countries of the reform. A change in our effective tax rate due to any of these factors may adversely influence our future results of operations.

In addition, the Inflation Reduction Act of 2022, or the IRA, was recently signed into law in August 2022. The IRA includes provisions that will impact the U.S. federal income taxation of corporations. Among other items, this legislation includes provisions that will impose a minimum tax on the book income of certain large corporations and an excise tax on certain corporate stock repurchases that would be imposed on the corporation repurchasing such stock. It is unclear how this legislation will be implemented by the U.S. Department of the Treasury and we cannot predict how this legislation or any future changes in tax laws might affect us or our common shares. Also, these new tax regimes may require systems and process changes. Any systems and process changes introduce additional operational risk.

Seasonal variations in demand linked to construction cycles and weather conditions may influence our results of operations.

Our business is subject to seasonal variations in demand linked to construction cycles and weather conditions. Demand for solar power and battery storage products and services from some markets, such as the U.S., China, Europe and Japan, may also be subject to significant seasonality due to adverse weather conditions that can complicate the installation of solar power and battery storage systems and negatively impact the construction schedules of solar and battery storage projects. Seasonal variations could adversely affect our results of operations and make them more volatile and unpredictable.

Our future success depends partly on our ability to maintain and expand our solar components manufacturing capacity, which exposes us to a number of risks and uncertainties.

Our future success depends partly on our ability to maintain and expand our solar components manufacturing capacity. If we are unable to do so, we may be unable to expand our business, maintain our competitive position, and improve our profitability. Our ability to expand our solar components production capacity is subject to risks and uncertainties, including:

- the need to raise significant additional funds to purchase raw materials and to build additional manufacturing facilities, which we may be unable to obtain on commercially reasonable terms or at all;
- delays and cost overruns as a result of a number of factors, many of which are beyond our control, including delays in equipment delivery by vendors;
- delays or denial of required regulatory approvals by relevant government authorities;
- diversion of significant management attention and other resources; and
- failure to execute our expansion plan effectively.

If we are unable to maintain and expand our internal production capacity, we may be unable to expand our business as planned. Moreover, even if we do maintain and expand our production capacity, we might still not be able to generate sufficient customer demand for our solar power and battery storage products to support the increased production levels.

We may be unable to generate sufficient cash flows or have access to external financing necessary to fund planned leverage of large-scale operations, manufacturing vertical integration and make adequate capital investments in manufacturing capacity and solar and battery storage project development.

We anticipate that our operating and capital expenditures requirements may increase. To develop new products, support future growth, achieve operating efficiencies and maintain product quality, we may need to make significant capital investments in manufacturing technology, facilities and capital equipment, research and development, and product and process technology. While we believe manufacturing vertical integration is a competitive advantage, giving us a low cost position as well as a more reliable intermediate supply, there can be no assurance that the significant additional resources expended in order to grow our upstream capacity in solar ingot, wafer and cell capacity will achieve the expected benefits or can be completed within the time or at the projected capital intensity. We also anticipate that our operating costs may increase as we expand our manufacturing operations, hire additional personnel, increase our sales and marketing efforts, invest in joint ventures and acquisitions, and continue our research and development efforts with respect to our products and manufacturing technologies.

Our operations are capital intensive. We rely on financing substantially from Chinese banks for our manufacturing operations. We cannot guarantee that we will continue to be able to extend existing or obtain new financing on commercially reasonable terms or at all. See “—Our dependence on Chinese banks to extend our existing financing and provide additional financing exposes us to short-term funding risks, which may materially and adversely affect our operations.” Also, even though we are a publicly-traded company and had successfully issued convertible notes in the past, we may not be able to raise capital via public equity and debt issuances due to market conditions and other factors, many of which are beyond our control. Our ability to obtain external financing is subject to a variety of uncertainties, including:

- our future financial condition, results of operations and cash flows;
- general market conditions for financing activities by manufacturers of solar power and battery storage products, including, but not limited to interest rates; and
- economic, political and other conditions in the PRC and elsewhere.

If we are unable to obtain funding in a timely manner and on commercially acceptable terms, our growth prospects and future profitability may be adversely affected.

Construction of our solar and battery storage projects may require us to obtain financing for our projects, including through project financing, fixed rate notes financing or others. If we are unable to obtain financing, or if financing is only available on terms which are not acceptable to us, we may be unable to fully execute our business plan. In addition, we generally expect to sell our projects to tax-oriented, strategic industry and other investors. Such investors may not be available or may only have limited resources, in which case our ability to sell our projects may be hindered or delayed and our business, financial condition, and results of operations may be adversely affected. There can be no assurance that we will be able to generate sufficient cash flows, find other sources of capital to fund our operations and solar and battery storage projects, make adequate capital investments to remain competitive in terms of technology development and cost efficiency required by our projects. If adequate funds and alternative resources are not available on acceptable terms, our ability to fund our operations, develop and construct solar and battery storage projects, develop and expand our manufacturing operations and distribution network, maintain our research and development efforts or otherwise respond to competitive pressures would be significantly impaired. Our inability to do the foregoing could have a material and adverse effect on our business and results of operations.

We have substantial indebtedness and may incur substantial additional indebtedness and increased cost of indebtedness in the future, which could adversely affect our financial health and our ability to generate sufficient cash to satisfy our outstanding and future debt obligations.

In the ordinary course of developing solar and battery storage projects, we carry substantial indebtedness and may incur substantial additional indebtedness in the future, which could adversely affect our financial health and our ability to generate sufficient cash to satisfy our outstanding and future debt obligations. Our substantial indebtedness could have important consequences for us and our shareholders. For example, it could:

- limit our ability to satisfy our debt obligations;
- increase our vulnerability to adverse general economic and industry conditions;
- require us to dedicate a substantial portion of our cash flow from operations to servicing and repaying our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures and for other general corporate purposes;
- limit our flexibility in planning for or reacting to changes in our businesses and the industry in which we operate;
- place us at a competitive disadvantage compared with our competitors that have less debt;
- limit, along with the financial and other restrictive covenants of our indebtedness, among other things, our ability to borrow additional funds; and
- increase the cost of additional financing.

In the future, we may from time to time incur substantial additional indebtedness and contingent liabilities. If we incur additional debt, the risks that we face as a result of our already substantial indebtedness and leverage could intensify. In addition, higher interest rates may increase our cost of obtaining loans and the cost of indebtedness, resulting in an increase in our financial expenses. This increase may adversely affect our ability to pay our financial obligations, as it reduces our cash availability.

Our ability to generate sufficient cash to satisfy our outstanding and future debt obligations will depend upon our future operating performance, which will be affected by prevailing economic conditions and financial, business and other factors, many of which are beyond our control. We cannot assure you that we will be able to generate sufficient cash flow from operations to support the repayment of our current indebtedness. If we are unable to service our indebtedness, we will be forced to adopt an alternative strategy that may include actions such as reducing or delaying capital expenditures, selling assets, restructuring or refinancing our indebtedness or seeking equity capital. These strategies may not be instituted on satisfactory terms, if at all. In addition, certain of our financing arrangements impose operating and financial restrictions on our business, which may negatively affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, fund required capital expenditures, or withstand a continuing or future downturn in our business. Any of these factors could materially and adversely affect our ability to satisfy our debt obligations.

We must comply with certain financial and other covenants under the terms of our debt instruments and the failure to do so may put us in default under those instruments.

Many of our debt instruments include financial covenants and broad default provisions. The financial covenants primarily include interest and debt coverage ratios, loan to equity value of designated projects ratios, debt to asset ratios and minimum equity requirements, which, in general, govern our existing long-term debt and debt we may incur in the future. These covenants could limit our ability to plan for or react to market conditions or to meet our capital needs in a timely manner and complying with these covenants may require us to curtail some of our operations and growth plans. In addition, any global or regional economic deterioration may cause us to incur significant net losses or force us to assume considerable liabilities, which would adversely impact our ability to comply with the financial and other covenants of our outstanding loans. If our creditors refuse to grant waivers for any non-compliance with these covenants, such non-compliance will constitute an event of default which may accelerate the amounts due under the applicable loan agreements. Some of our loan agreements also contain cross-default clauses that could enable creditors under our debt instruments to declare an event of default should there be an event of default on our other loan agreements. We cannot assure you that we will be able to remain in compliance with these covenants in the future. We may not be able to cure future violations or obtain waivers of non-compliance on a timely basis. An event of default under any agreement governing our existing or future debt, if not cured by us or waived by our creditors, could have a material adverse effect on our liquidity, financial condition and results of operations.

Our dependence on Chinese banks to extend our existing financing and provide additional financing exposes us to short-term funding risks, which may materially and adversely affect our operations.

We require significant cash flow and funding to support our operations. As a result, we rely on short-term borrowings, letters of credit and short-term notes payable to provide working capital for our daily manufacturing operations. Since a significant portion of these financings come from Chinese banks, we are exposed to lending policy changes by the Chinese banks. As of December 31, 2022, we had outstanding borrowings of \$1,191.3 million, letters of credit of \$150.4 million and short-term notes payable of \$1,493.4 million with Chinese banks.

If the Chinese government changes its macroeconomic policies and forces Chinese banks to tighten their lending practices, or if Chinese banks are no longer willing to provide financing to solar companies, including us, we may not be able to extend our short-term borrowings or make additional borrowings in the future. As a result, we may not be able to fund our operations to the same extent as in previous years, which may have a material and adverse effect on our operations.

Cancellations of customer orders may make us unable to recoup any prepayments made to suppliers.

In the past, we were required to make prepayments to certain suppliers, primarily suppliers of machinery, silicon raw materials, solar ingots, wafers and cells. Although we require certain customers to make partial prepayments, there is generally a lag between the due date for the prepayment of purchased machinery, silicon raw materials, solar ingots, wafers and cells and the time that our customers make prepayments. In the event that our customers cancel their orders, we may not be able to recoup prepayments made to suppliers, which could adversely influence our financial condition and results of operations.

Long-term supply agreements may make it difficult for us to adjust our raw material costs should prices decrease. Also, if we terminate any of these agreements, we may not be able to recover all or any part of the advance payments we have made to these suppliers and we may be subject to litigation.

We may enter into long-term supply agreements with silicon and wafer suppliers with fixed price and quantity terms in order to secure a stable supply of raw materials to meet our production requirements. If, during the term of these agreements, the price of materials decreases significantly and we are unable to renegotiate favorable terms with our suppliers, we may be placed at a competitive disadvantage compared to our competitors, and our earnings could decline. Furthermore, as we further expand our capacity, our need for long-term supply agreements may change, depending on our view of the supply chain. In addition, if demand for our solar power and battery storage products decreases, yet our supply agreements require us to purchase more silicon wafers and solar cells than required to meet customer demand, we may incur costs associated with carrying excess inventory. To the extent that we are not able to pass these increased costs on to our customers, our business, cash flows, financial condition and results of operations may be materially and adversely affected. If our suppliers file lawsuits against us for early termination of these contracts, such events could be costly, may divert management's attention and other resources away from our business, and could have a material and adverse effect on our reputation, business, financial condition, results of operations and prospects.

Credit terms offered to some of our customers expose us to the credit risks of such customers and may increase our costs and expenses, which could in turn materially and adversely affect our revenues, liquidity and results of operations.

We offer unsecured short-term or medium-term credit to some of our customers based on their creditworthiness and market conditions. As a result, our claims for payments and sales credits rank as unsecured claims, which expose us to credit risk if our customers become insolvent or bankrupt.

From time to time, we sell our products to high credit risk customers in order to gain early access to emerging or promising markets, increase our market share in existing key markets or because of the prospects of future sales with a rapidly growing customer. There are significant credit risks in doing business with these customers because they are often small, young and high-growth companies with significant unfunded working capital, inadequate balance sheets and credit metrics and limited operating histories. If these customers are not able to obtain satisfactory working capital, maintain adequate cash flow, or obtain construction financing for the projects where our solar products are used, they may be unable to pay for the products for which they have ordered or of which they have taken delivery. Our legal recourse under such circumstances may be limited if the customer's financial resources are already constrained or if we wish to continue to do business with that customer. Revenue recognition for this type of customer is deferred until cash is received.

If more customers to whom we extend credit are unable to pay for our products, our revenues, liquidity and results of operations could be materially and adversely affected.

Supply chain issues, including shortages of adequate raw materials, component and equipment supply, cancellation or delay of purchase orders, inflationary pressures and cost escalation could adversely affect our business, results of operations and relationship with customers, particularly given our dependence on a limited number of suppliers of key elements like silicon wafers and cells.

We depend mainly on third-party suppliers for raw materials and components such as solar silicon, ingots, wafer, cell, metallic pastes, glass, aluminum frames, ethylene vinyl acetate ("EVA", an encapsulant used to seal the module), junction boxes, polymer back sheets, lithium iron phosphate battery cell, inverter, tracker, mounting hardware, and grid interconnection and power stability equipment, and we also procure certain equipment overseas. We procure these materials and equipment for our products from a limited number of suppliers. By way of example, in 2022, a significant portion of the silicon raw materials, wafers and solar cells used in our solar modules was purchased from third parties. Our suppliers may not always be able to meet quantity requirements, or keep pace with the price reductions or quality improvements, necessary for us to price products and projects competitively. Additionally, they may experience manufacturing delays and increased manufacturing costs that could increase the lead time for deliveries or impose price increases.

The failure of a supplier, for whatever reason, to supply the materials, essential components and equipment that meet quality, quantity and cost requirements in a timely manner could impair our ability to manufacture products (including solar modules) or develop projects, increase costs, hinder compliance with supply agreements' terms and may result, ultimately, in cancellation of purchase orders and potential liability for us. The impact could be more severe if we are unable to access alternative sources on a timely basis or on commercially reasonable terms to deliver products to customers in the required quantities and at prices that are profitable. Although we may build buffer inventories from time to time, there can be no assurance that any such buffer inventories will address all the supply chain failures that may arise. Further, a significant portion of our manufacturing and suppliers' manufacturing and supply chain are operated in China, and may be subject to potential disruptions due to government-mandated facility closure as a consequence of energy shortage or other causes. Supply may also be interrupted by accidents, disasters or other unforeseen events beyond our control.

The search for alternative sources of supply to face the above problems may increase our manufacturing costs. Likewise, increased integration of manufacturing processes to lower costs could potentially damage our business, results of operations and relationship with customers. In any case, in spite of the possible implementation of remedial courses of action or fallback plans, we may not be able to offset this impact through increases in product pricing or through alternate sources of supply. Problems of this kind could consequentially reduce market share, harm our reputation and cause legal disputes with customers. All of the abovementioned factors could adversely impact our business, results of operations and relationship with customers.

We will need to maintain and significantly increase our access to battery cells and control our related costs.

We are dependent on the continued supply of lithium iron phosphate battery cells for our energy storage production, and we will require substantially more cells to grow our business according to our plans. Currently, we rely on third-party suppliers for these lithium iron phosphate cells. We have to date only a very limited number of such suppliers and have limited flexibility in changing suppliers. Any disruption in the supply of battery cells from our suppliers could limit production of our energy storage products. During 2022, we launched the SolBank, a lithium iron phosphate (LiFePO₄) chemistry-based battery storage enclosure with up to 2.8 MWh of usable energy capacity, specifically engineered for utility-scale applications. We intend to produce SolBank on fully automated, state-of-the-art production and testing facilities. Despite our efforts to develop our proprietary battery storage systems, we still intend to rely on our third-party suppliers for the production of battery cells.

In addition, the cost and mass production of battery cells depends in part upon the prices and availability of raw materials such as iron phosphate, lithium carbonate and/or other metals. The prices for these materials fluctuate and their available supply may be unstable, depending on market conditions and global demand for these materials. Moreover, our inability to meet demand and any product price may harm our brand, growth, prospects and operating results.

Inflation in many countries and regions, especially in those where we operate, may adversely affect our business and our profitability.

As of December 31, 2022, we have facilities and offices in many countries and regions, including Canada, Japan, Australia, Singapore, Korea, Hong Kong, Taiwan, India, Indonesia, Thailand, Vietnam, Brazil, United Arab Emirates, South Africa, the Americas, the EU (which includes Germany, Italy, Netherlands, Spain and Poland), the U.K. and the PRC. We currently sell our products to a diverse customer base in various markets worldwide, including the U.S., Canada, Germany, Spain, the Netherlands, South Africa, China, Japan, India, Thailand, Australia, Brazil and the U.K. As such, we are exposed to the inflation risks therein.

While the inflation rates in certain countries, e.g. China, have been relatively tame in recent years (2.5%, 0.9% and 2.0% in 2020, 2021 and 2022, respectively, according to the National Bureau of Statistics of China), other countries and regions have experienced higher inflation rates. Most Latin American countries have historically experienced, and may continue to experience in the future, high inflation rates. For example, Argentina, a country where we operate a solar project, experienced inflation rates of 36.1%, 50.9% and 94.8% in 2020, 2021 and 2022, respectively, according to Central Bank of Argentina. Brazil, a country where we operate solar project business and secure financing facility, experienced inflation rates of 4.5%, 10.1% and 5.8% in 2020, 2021 and 2022, respectively, according to its National Consumer Price Index, which is published by the Brazilian Institute for Geography and Statistics, or IBGE. The measures taken by the Brazilian government to curb inflation have included maintaining strict monetary policies and high interest rates, which restricted the availability of credit.

Inflation could increase the costs of our raw material such as polysilicon, wafer, PV cell and lithium iron phosphate battery cell, and our general costs and expenses such as transportation and wages. In addition, inflation tends to devalue a currency. As a result, countries experiencing high inflation tend to also see their currencies weaken relative to other currencies, which may expose multinational companies like us to exchange-related risks. Please see “—Fluctuations in exchange rates could adversely affect our business, including our financial condition and results of operations” for the details on such risks.

Recently, inflation has continued to sharply increase, particularly in the U.S. and Europe. We may not be able to adjust the pricing of our solar power and battery storage products or PPAs sufficiently or take appropriate pricing actions to fully offset the effects of inflation on our cost structures and the interest effects of our inflation-indexed debt, for example our Brazilian reals financings. Moreover, although certain of our PPAs have variable or fixed inflation indexation, our ability to benefit from the relevant inflation update mechanism may be affected by events beyond our control, such as the actions by the regulatory authorities and the adherence to comply with the PPA terms by the purchasers of power under these contracts. We may fail to maintain current levels of gross profit and operating, selling and distribution, general and administrative expenses and maintenance costs as a percentage of total net revenues. As such, rising inflation rates may negatively impact our profitability. In addition, a high inflation environment would also have negative effects on the level of economic activity, employment and adversely affect our business, results of operations and financial conditions. For example, as a result of the effects of inflation in the global economy, certain governmental authorities responsible for administering monetary policy have recently increased, and are likely to continue to increase, applicable central bank interest rates, which may require us to pay higher interest rates on debt securities that we issue in the financial market from time to time to finance our operations and increase our interest expenses.

We are developing and commercializing higher conversion efficiency cells, but we may not be able to mass-produce these cells in a cost-effective way, if at all.

Higher efficiency cell structures are becoming an increasingly important factor in cost competitiveness and brand recognition in the solar power industry. Such cells may yield higher power outputs at the same cost to produce as lower efficiency cells, thereby lowering the manufactured cost per watt. The ability to manufacture and sell solar modules made from such cells may be an important competitive advantage because solar system owners can obtain a higher yield of electricity from the modules that have a similar infrastructure, footprint and system cost compared to systems with modules using lower efficiency cells. Higher conversion efficiency solar cells and the resulting higher output solar modules are one of the considerations in maintaining a price premium over thin-film products. For example, we have focused our research and development initiatives for new products on N-type HJT cell, TOPCon cell, and other technologies such as interdigitated back contact (“IBC”) cell. We have also launched HJT module products in mid 2022 for high-end roof-top application. We launched TOPCon products in late 2022. However, while we are making the necessary investments to develop higher conversion efficiency solar power products, there is no assurance that we will be able to commercialize some or any of these products in a cost-effective way, or at all. In the near term, such products may command a modest premium. In the longer term, if our competitors are able to manufacture such products and we cannot do the same at all or in a cost-effective way, we will be at a competitive disadvantage, which will likely influence our product pricing and our financial performance.

We may be subject to unexpected warranty and product quality expenses that may not be adequately covered by our insurance policies.

We warrant, for a period up to fifteen years or twenty-five years for certain module types, that our solar products will be free from defects in materials and workmanship.

We also warrant that, for a period of 25 years, our Ku/Hiku modules will maintain the following performance levels:

- during the first year, the actual power output of the module will be no less than 97.5% of the labeled power output;
- from the second year to the 25th year, the actual annual power output decline of the module will be no more than 0.55%; and
- by the end of the 25th year, the actual power output of the module will be no less than 84.8% of the labeled power output.

We have provided warranty against decline in performance to 30 years for our bifacial module and double glass module products.

We believe that our warranty periods are consistent with industry practice. Due to the long warranty period, however, we bear the risk of extensive warranty claims long after we have shipped our products and recognized revenue. We began selling specialty solar products in 2002 and began selling standard solar modules in 2004. Any increase in the defect rate of our products would require us to increase our warranty reserves and would have a corresponding negative impact on our results of operations. Although we conduct quality testing and inspection of our solar module products, these have not been and cannot be tested in an environment simulating the up-to-30-year warranty periods. In particular, unknown issues may surface after extended use. These issues could potentially affect our market reputation and adversely affect our revenues, giving rise to potential warranty claims by our customers. As a result, we may be subject to unexpected warranty costs and associated harm to our financial results as long as 30 years after the sale of our products.

We warrant battery storage products for a specific amount of time against performance or manufacturing defects. The warranty is typically for an initial term of 5 years from the date of installation, with an option for annual extensions for an additional 15 years. We continuously monitor warranty failures and maintain a reserve for the related warranty expenses based on various factors, including historical warranty claims, results of field monitoring, vendor reliability estimates, and data on industry averages for similar products. Our battery storage product warranty reserves are based on various assumptions, which are based on a short operating history. As a result, these assumptions could prove to be materially different from the actual performance of our battery storage products and may cause substantial unanticipated cost to repair or replace defective and damaged products in the future or to compensate customers. Our failure to accurately predict future claims could result in unexpected volatility in, and have a material adverse effect on our results of operations, financial condition and business prospects.

For solar and battery storage projects built by us, we also provide a limited workmanship or balance of system warranty against defects in engineering, design, installation and construction under normal use, operation and service conditions generally for a period of two years following the energizing of the project. In resolving claims under the workmanship or balance of system warranty, we have the option of remedying through repair, refurbishment or replacement of equipment. We have also entered into similar workmanship warranties with our suppliers to back up our warranties.

As part of our energy business, before commissioning solar and battery storage projects, we conduct performance testing to confirm that the projects meet the operational and capacity expectations set forth in the agreements. In limited cases for solar power projects, we also provide for an energy generation performance test designed to demonstrate that the actual energy generation for up to the first three years meets or exceeds the modeled energy expectation (after adjusting for actual solar irradiation). In the event that the energy generation performance test performs below expectations, the appropriate party (EPC contractor or equipment provider) may incur liquidated damages capped at a percentage of the contract price.

We have entered into agreements with a group of insurance companies with high credit ratings to back up a portion of our warranties. Under the terms of the insurance policies, which are designed to match the terms of our solar module product warranty policy, the insurance companies are obliged to reimburse us, subject to certain maximum claim limits and certain deductibles, for the actual product warranty costs that we incur under the terms of our solar module product warranty policy. We record the insurance premiums initially as prepaid expenses and amortize them over the respective policy period of one year. However, potential warranty claims may exceed the scope or amount of coverage under this insurance and, if they do, they could materially and adversely affect our business.

We may not continue to be successful in developing and maintaining a cost-effective solar cell, wafer and ingot manufacturing capability.

Our annual solar cell, wafer and ingot production capacity was 19.8 GW, 20.0 GW and 20.4 GW, respectively, as of December 31, 2022. To remain competitive, we intend to expand our annual solar cell, wafer and ingot production capacity to meet expected growth in demand for our solar modules. We target to expand our solar module, solar cell, wafer and ingot total annual manufacturing capacities to 75.0 GW, 60.0 GW, 50.0 GW and 50.4 GW, respectively, by March 2024, of which 50.0 GW, 50.0 GW, 35.0 GW and 20.4 GW, respectively, is targeted for December 2023. We continually engage in the development of manufacturing process technologies and expansion of our production capacity. In doing so, we may face significant product development challenges, significant expense and inherent risks. Manufacturing solar cells, wafers and ingots is a complex process and we may not be able to produce these items with sufficient quality to meet our solar module manufacturing standards. Minor deviations in the manufacturing process can cause substantial decreases in yield and in some cases result in no yield or cause production to be suspended. We will need to make capital expenditures to purchase manufacturing equipment for solar cell, wafer and ingot production and will also need to make significant investments in research and development to keep pace with technological advances in solar power technology. We cannot guarantee that we will realize the expected benefits of our capacity expansion, or that we will achieve an adequate return on our capital and research and development investments. Any failure to successfully develop and maintain cost-effective manufacturing capability may have a material and adverse effect on our business and prospects. For example, we have in the past purchased a large percentage of solar cells from third parties. This negatively affected our margins compared with those of our competitors since it is less expensive to produce cells internally than to purchase them from third parties. Because third party solar cell purchases are usually made in a period of high demand, prices tend to be higher and availability reduced.

Although we intend to continue direct purchasing of solar cells, wafers and ingots and toll manufacturing arrangements through a limited number of strategic partners, our relationships with our suppliers may be disrupted if we engage in the large-scale production of solar cells, wafers and ingots ourselves. If our suppliers discontinue or reduce the supply of solar cells, wafers and ingots to us, through direct sales or through toll manufacturing arrangements, and we are not able to compensate for the loss or reduction by manufacturing our own solar cells, wafers and ingots, our business and results of operations may be adversely affected. For more details, see “Item 6. Directors, Senior Management and Employees—D. Employees.”

We may not achieve acceptable yields and product performance as a result of manufacturing problems.

We need to continuously enhance and modify our solar module, cell, wafer and ingot production capabilities in order to improve yields and product performance. Microscopic impurities such as dust and other contaminants, difficulties in the manufacturing process, disruptions in the supply of utilities or defects in the key materials and tools used to manufacture solar modules, cells, ingots and wafers can cause a percentage of the solar modules, cells, ingots and wafers to be rejected, which would negatively affect our yields. We may experience manufacturing difficulties that cause production delays and lower-than-expected yields. Furthermore, we may identify product defects, deviations from published standards, and other product issues, which can result from problems in our manufacturing process. Components and products we purchase or license from third-party suppliers can also contain defects. We face risks if products that we manufacture, or sell, or that include our technology, cause injury or property damage, even where the cause is unrelated to product defects.

Problems in our facilities, including but not limited to production failures, human errors, weather conditions, equipment malfunction or process contamination, may limit our ability to manufacture products, which could seriously harm our operations. We are also susceptible to floods, tornados, droughts, power losses and similar events beyond our control that would affect our facilities. A disruption

in any step of the manufacturing process will require us to repeat each step and recycle the silicon debris, which would adversely affect our yields and manufacturing cost.

Logistical challenges, including global freight capacity shortages, port congestions or significant increases in freight costs, could increase our selling costs or cause delays in our order fulfilment, and our business, financial condition and results of operations may be adversely affected.

Our shipping and handling expenses, included in selling and distribution expenses, is a significant component of our costs, and amounted to \$134.2 million, \$316.4 million and \$453.9 million for the years ended December 31, 2020, 2021 and 2022, respectively. Moreover, our ability to transport products to customers in a timely and cost-effective manner may be adversely affected, from time to time, by the global shortage of freight capacity, delays at ports and other issues that otherwise affect third-party logistics service providers. These issues could prevent the timely or proper delivery of products to customers or require us to locate alternative ports or warehousing providers to avoid disruption to customers, which may negatively impact our business prospects and relationship with customers. Also, from time to time, ocean freight markets might experience overcapacity, which could in turn result in reduced freight route options and frequencies. These interruptions and the availability of alternative transportation routes can be affected by the ability of the cargo vessel to call on or depart from ports on a timely basis or at all, rules and regulations applicable to the cargo industry, change in worldwide cargo fleet capacity, weather events, global and regional economic and political conditions, environmental and other regulatory developments. Our ability to plan our pricing strategy may be impacted and to the extent we are unable to pass along the increased costs to our customers, our financial condition and results of operations could be adversely affected.

In addition, interruptions, failures or price increases in logistics services can result from events that are beyond our control, such as inclement weather, natural disasters, the COVID-19 pandemic, other pandemics or epidemics, accidents, transportation disruptions, including special or temporary restrictions or closings of facilities or transportation networks due to regulatory or political reasons, or labor unrest or shortages.

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

Our future success depends, to a significant extent, on our ability to attract and retain technical and experienced personnel, while integrating diversity, equity and inclusion principles and practices into our human capital resources management. Recruiting and retaining qualified technical personnel, particularly those with expertise in the solar power and battery storage industry, are vital to our success. Integrating new executives into management and training new employees with limited prior experience in the industry could limit our ability to effectively implement our strategy, and may require a disproportionate amount of resources and management attention. Labor is subject to external factors that are beyond our control, including our industry's highly competitive market for skilled workers and management, cost inflation and workforce participation rates. There can be no assurance that we will be able to attract, integrate, train, motivate or retain sufficiently qualified employees. If we are unable to attract and retain qualified employees, our business may be materially and adversely affected.

Our dependence on a limited number of customers and our lack of long-term customer contracts may cause significant fluctuations or declines in our revenues.

We sell a substantial portion of our solar module and battery storage products to a limited number of customers, including distributors, system integrators, project developers, infrastructure funds and installers/EPC companies. We sell solar and battery storage projects to limited number of utility companies or grid operators, and sell electricity to a limited number of customers including public utilities, licensed suppliers, corporate off-takers, or commercial, industrial or government end users. Our top five customers by revenues collectively accounted for approximately 21.2%, 18.6% and 15.9% of our net revenues in 2020, 2021 and 2022, respectively. We anticipate that our dependence on a limited number of customers will continue for the foreseeable future. Consequently, any of the following events may cause material fluctuations or declines in our revenues:

- reduced, delayed or cancelled orders from one or more of our significant customers;
- the loss of one or more of our significant customers;
- a significant customer's failure to pay for our products on time; and
- a significant customer's financial difficulties or insolvency.

As we continue to expand our business and operations, our top customers continue to change. We cannot assure that we will be able to develop a consistent customer base.

There are a limited number of purchasers of utility-scale quantities of electricity and entities that have the ability to interconnect projects to the grid, which exposes us and our utility scale solar and battery storage projects to additional risk.

Since the transmission and distribution of electricity is either monopolized or highly concentrated in most jurisdictions, there are a limited number of possible purchasers for utility-scale quantities of electricity in a given geographic location, normally transmission grid operators, state and investor-owned power companies, public utility districts, cooperatives, electricity market regulators, and commercial and industrial (C&I) customers. As a result, there is a concentrated pool of potential buyers for electricity generated by our solar power plants, which may restrict our ability to negotiate favorable terms under new PPAs and could impact our ability to find new customers for the electricity generated by our solar power plants should this become necessary. Additionally, these possible purchasers may have a role in connecting our projects to the grid to allow the flow of electricity. Furthermore, if the financial condition of these utilities and/or power purchasers deteriorates, or government policies or regulations to which they are subject and which compel them to source renewable energy supplies change, demand for electricity produced by our plants or the ability to connect to the grid could be negatively impacted. In addition, provisions in our PPAs or applicable laws may provide for the curtailment of delivery of electricity for various reasons, including preventing damage to transmission systems, system emergencies, force majeure or economic reasons. Such curtailment could reduce revenues for us from our PPAs and could adversely affect electricity pricing available on the spot-market. If we cannot enter into PPAs on terms favorable to us, or at all, or if the purchaser under our PPAs were to exercise its curtailment or other rights to reduce purchases or payments under the PPAs, our revenues, our decisions regarding development of additional projects and our ability to capitalize fully on a particular project's potential in the energy business may be adversely affected.

Product liability claims against us could result in adverse publicity and potentially significant monetary damages.

We, along with other solar power and battery storage product manufacturers, are exposed to risks associated with product liability claims if the use of our solar and battery power products results in injury or death. Since our products generate or store electricity, it is possible that users could be injured or killed by our products due to product malfunctions, defects, improper installation or other causes. Although we carry limited product liability insurance, we may not have adequate resources to satisfy a judgment if a successful claim is brought against us. The successful assertion of product liability claims against us could result in potentially significant monetary damages and require us to make significant payments. Even if the product liability claims against us are determined in our favor, we may suffer significant damage to our reputation.

Our founder, Dr. Shawn Qu, has substantial influence over our company and his interests may not be aligned with the interests of our other shareholders.

As of January 31, 2023, Dr. Shawn Qu, our founder, Chairman, President and Chief Executive Officer, beneficially owned 13,740,090 common shares, or 21.3% of our outstanding shares. Dr. Shawn Qu is also the chairman of CSI Solar. As a result, Dr. Shawn Qu has substantial influence over our business, including decisions regarding mergers and acquisition, consolidations, the sale of all or substantially all of our assets, the election of directors and other significant corporate actions. This concentration of ownership may discourage, delay or prevent a change in control of our company, which could deprive our other shareholders of an opportunity to receive a premium for their shares as part of a sale of our company and might reduce the price of our common shares.

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

Our success depends on our ability to develop and use our technology and know-how and sell our solar power and battery storage products and services without infringing the intellectual property or other rights of third parties. The validity and scope of claims against us in our ordinary course of business relating to solar power and battery storage technology patents involve complex scientific, legal and factual questions and analyses and are therefore highly uncertain. We may be subject to litigation involving claims of patent infringement or the violation of intellectual property rights of third parties. Defending intellectual property suits, patent opposition proceedings and related legal and administrative proceedings can be both costly and time-consuming and may significantly divert the efforts and resources of our technical and management personnel. Additionally, we use both imported and China-made equipment in our production lines, sometimes without sufficient supplier guarantees that our use of such equipment does not infringe third-party intellectual property rights. This creates a potential source of litigation or infringement claims. An adverse determination in any such litigation or proceedings to which we may become a party from time to time could subject us to significant liability to third parties or require us to seek licenses from third parties, pay ongoing royalties, redesign our products or subject us to injunctions prohibiting the manufacture and sale of our products or the use of our technologies. Protracted litigation could also defer customers or potential customers or limit their purchase or use of our products until such litigation is resolved.

Compliance with environmental laws and regulations can be expensive, and noncompliance with these regulations may result in adverse publicity and potentially significant monetary damages, fines and the suspension or even termination of our business operations.

We are required to comply with all national and local environmental regulations. Our business generates noise, wastewater, air emissions and other industrial waste in our operations and the risk of incidents with a potential environmental impact has increased as our business has expanded. We believe that we substantially comply with all relevant environmental laws and regulations and have all necessary environmental permits to conduct our business as it is presently conducted. We have also increased our scrutiny of our suppliers on ESG requirements and implemented ESG compliance audits across our supply chain. However, if more stringent regulations are adopted in the future, the costs of complying with these new regulations could be substantial. If we fail to comply with present or future environmental regulations, we may be required to pay substantial fines, suspend production or cease operations.

Our solar power and battery storage products must comply with the environmental regulations of the jurisdictions in which they are installed, and we may incur expenses to design and manufacture our products to comply with such regulations. We conduct extensive environmental studies during the development phase of our solar and battery storage projects to assess and reduce their environmental impact. If compliance is unduly expensive or unduly difficult, we may lose market share and our financial results may be adversely affected. Any failure by us to control our use or to restrict adequately the discharge, of hazardous substances could subject us to potentially significant monetary damages, fines or suspensions of our business operations.

Our energy projects are subject to numerous environmental, health and safety laws and regulations in each of the jurisdictions in which our projects operate or will operate. In certain cases, certain projects are required to undergo environmental impact assessments and undertake programs to protect and maintain local endangered or threatened species. If such programs are not successful, our projects could be subject to increased levels of mitigation, operational curtailment, penalties or revocation of our permits. Our costs of complying with current and future environmental, health and safety laws, regulations and permit requirements (or other similar requirements), and any liabilities, fines or other sanctions resulting from violations, could have a material adverse effect on our business operations.

Emerging legislation, regulations or government actions related to climate change, greenhouse gas emissions and substantiality initiatives could result in significant additional costs and expose us to additional liabilities.

Greenhouse gases (“GHGs”) are emitted directly by our operations. Emerging laws and regulations related to climate change, GHG emissions and sustainability initiatives may require renewable energy companies to obtain and maintain permits and approvals, undergo lengthy environmental review processes, and implements relevant programs to monitor and control the relevant risks. For example, as a result of commitments made at the UN Climate Change Conference in Durban, South Africa, in December 2011, certain members of the international community negotiated a treaty at the Conference of the Parties of the UN Framework Convention on Climate Change in Paris in December 2015, or the Paris Agreement. The Paris Agreement, which came into force in November 2016, requires developed countries to set targets for GHG emissions reductions. In addition, the international community gathered at Glasgow at the 26th Conference of the Parties on the UN Framework Convention on Climate Change (“COP26”), during which multiple announcements were made, including a call for parties to eliminate certain fossil fuel subsidies and net zero commitments made by countries such as the United States and China. In order to meet national reductions commitments, including a goal of “net zero” carbon emissions or carbon neutrality by 2050 set by numerous jurisdictions, it is likely that various countries will implement or adopt additional measures addressing GHG emissions, including stricter GHG emissions limits and/or some form of carbon pricing, in the future.

Since 2020, we have been proactively measuring the GHG emissions of its operations, especially our manufacturing operations, for both scope 1 and scope 2 emissions, as well as a subset of scope 3 emissions according to the ISO14064-1:2018 standard (Specification with Guidance at the Organization Level for Qualification and Reporting of Greenhouse Gas Emissions and Removals). Since 2020, we have been announcing rolling 5-year targets to reduce GHG emissions which are updated on an annual basis (in addition to targets to reduce manufacturing energy intensity, water use intensity and waste intensity). We have also committed to achieving the goal of powering all our operations with renewable energy in this decade, through building rooftop solar power on our own manufacturing plants for self-consumption, procuring green energy from third parties and green certificates. These initiatives will meaningfully reduce our GHG emissions in the future, and may be subject to policy, market or cost barriers in the locations where we operate. In addition, since 2020, we have been publishing disclosures on our climate-related financial risks and opportunities according to the Task Force on Climate-Related Financial Disclosures (“TCFD”). These initiatives are expected to help reduce our exposure to future changes in policy related to climate change and GHG emissions.

Furthermore, our business model is based on helping our customers decarbonize their energy consumption, directly contributing towards mitigating risks related to climate change and other sustainability initiatives. We expect 100% of our revenues to be derived from clean solar energy or battery energy storage business which helps grids absorb greater quantities of clean solar or wind energy.

Carbon pricing refers to various initiatives that seek to internalize the social or environmental cost of carbon on industries by imposing taxes, cap-and-trade schemes and/or elimination of free credits for carbon emissions. As governments continue to set aggressive decarbonization targets to meet the commitments made as a result of the Paris Agreement, carbon pricing systems are likely to be implemented in a number of jurisdictions where we operate. Such measures could require us to reduce our direct GHG emissions or energy use or to incur significant costs for GHG emissions allowances or taxes, including as a result of costs or taxes passed on by electricity utilities which supply our operations. We could also incur significant costs associated with capital equipment to reduce GHG emissions, as well as GHG monitoring and reporting and other obligations to comply with applicable requirements. Certain countries have passed or are considering GHG trading or tax schemes and/or other regulation of GHG emissions, although the precise impact on our operations cannot yet be determined.

Corporate responsibility, specifically related to Environmental, Social and Governance (“ESG”) matters and unsuccessful management of such matters may adversely impose additional costs and expose us to new risks.

Public ESG and sustainability reporting is becoming more broadly expected by investors, shareholders and other third parties. Certain organizations that provide corporate governance and other corporate risk information to investors and shareholders have developed, and others may in the future develop, scores and ratings to evaluate companies and investment funds based upon ESG or “sustainability” metrics. Many investment funds focus on positive ESG business practices and sustainability scores when making investments and may consider a company’s ESG or sustainability scores as a reputational or other factor in making an investment decision. In addition, investors, particularly institutional investors, use these scores to benchmark companies against their peers and if a company is perceived as lagging, these investors may engage with such company to improve ESG disclosure or performance and may also make voting decisions, or take other actions, to hold these companies and their boards of directors accountable. We may face reputational damage in the event our corporate responsibility initiatives or objectives, including with respect to board diversity, do not meet the standards set by our investors, shareholders, lawmakers, listing exchanges or other constituencies, or if we are unable to achieve an acceptable ESG or sustainability rating from third party rating services. Ongoing focus on corporate responsibility matters by investors and other parties as described above may impose additional costs or expose us to new risks, including increased risk of investigation and litigation, and negative impacts on the value of our products and access to capital, which may put us at a commercial disadvantage relative to our peers.

We have been and continue to rigorously monitor a range of sustainability-related key performance indicators, have adopted an ESG strategy, set meaningful targets, and instituted structures to ensure that ESG factors are incorporated in every major business decision we make and across our business. In addition, we also promote diversity, equity, and inclusion (“DEI”), as we believe a diverse workforce will enrich the human capital of our organization. For example, we have filed the Equal Employment Opportunity Form for our operations in the U.S., which provides a demographic breakdown of our workforce in the U.S. by race and gender. See “Item 4. Information on the Company—B. Business Overview—Environmental, Social and Governance Initiatives.” However, implementing our ESG strategy and DEI initiatives may result in increased costs in our supply chain, fulfillment, and/or corporate business operations, and could deviate from our initial estimates and have a material adverse effect on our business and financial condition. In addition, standards and research regarding ESG strategies could change and become more onerous both for us and our third-party suppliers and vendors to meet successfully. As such, there can be no certainty that we will be able to meet our ESG or other strategic objectives in an efficient and timely manner or at all, or that we will successfully meet societal expectations in this regard.

Furthermore, while we are already instituting meaningful decarbonization and other initiatives that help us reduce the environmental impact of our operations, new climate change laws and regulations could require us to change our manufacturing processes or procure substitute raw materials that may cost more or be more difficult to procure. Various jurisdictions in which we do business have implemented, or in the future could implement or amend, restrictions on emissions of carbon dioxide or other greenhouse gases, limitations or restrictions on water use, regulations on energy management and waste management, and other climate change-based rules and regulations, which may increase our expenses and adversely affect our operating results. We expect increased worldwide regulatory activity relating to climate change in the future. Future compliance with these laws and regulations may adversely affect our business and results of operations.

We face risks related to natural disasters, health epidemics, such as COVID-19, and other catastrophes, which could significantly disrupt our operations.

Our business could be materially and adversely affected by natural disasters or other catastrophes, such as earthquakes, fire, floods, hail, windstorms, severe weather conditions, environmental accidents, power loss, communications failures, explosions, terrorist attacks and similar events. Our business could also be materially and adversely affected by public health emergencies, such as the outbreak of avian influenza, severe acute respiratory syndrome, or SARS, Zika virus, Ebola virus, the 2019 novel coronavirus (“COVID-19”) or other local health epidemics in China and elsewhere and global pandemics. If any of our employees is suspected of having contracted any contagious disease, we may, under certain circumstances, be required to quarantine those employees and the affected areas of our operations. As a result, we may have to temporarily suspend part or all of our facilities. Furthermore, authorities may impose restrictions on travel and transportation and implement other preventative measures in affected regions to deal with the catastrophe or emergency, which may lead to the temporary closure of our facilities and declining economic activity at large.

The COVID-19 pandemic has continued to pose significant challenges to many aspects of our business, including our operations, customers, suppliers and projects. The extent to which the COVID-19 has and may persist to impact our ability to effectively operate continues to be highly uncertain. The outbreak continues to evolve, and the impact that COVID-19, or new variants of COVID-19, will ultimately have on our result of operations, financial condition, liquidity and cash flows cannot be estimated and is impossible to predict. We will continue to monitor and adhere to the policies, lockdowns, restrictions, and preventive measures implemented by the various government authorities, as well as general movement restrictions, social distancing and other measures imposed that may continue to evolve.

For example, at the end of 2022, many of the restrictive measures previously adopted by the PRC governments at various levels to control the spread of the COVID-19 virus have been revoked or replaced with more flexible measures. To the extent that future spread of COVID-19 disrupts normal business operations, we may face challenges with our operations and projects. Moreover, a prolonged outbreak of any health epidemic or other adverse public health developments could have a material adverse effect on our business operations.

We may not be successful in establishing our brand name in important markets and the products we sell under our brand name may compete with the products we manufacture on an original equipment manufacturer, or OEM, basis for our customers.

We sell our products primarily under our own brand name but also on an OEM basis. In certain markets, our brand may not be as prominent as other more established solar power and battery storage product vendors, and there can be no assurance that our brand names “Canadian Solar”, “CSI”, “CSI Solar”, “Recurrent Energy”, “SolBank”, “EP Cube”, or any of our possible future brand names will gain acceptance among customers. Moreover, because the range of products that we sell under our own brands and those we manufacture for our OEM customers may be substantially similar, we may end up directly or indirectly competing with our OEM customers, which could negatively affect our relationship with them.

Failure to protect our intellectual property rights in connection with new solar power and battery storage products may undermine our competitive position.

As we develop and bring to market new solar power and battery storage products, we may need to increase our expenditures to protect our intellectual property. Our failure to protect our intellectual property rights may undermine our competitive position. As of February 28, 2023, we had 2,022 patents and 595 patent applications pending in the PRC for products that contribute a relatively small percentage of our net revenues. We have 15 U.S. patents, including 5 design patent, and 13 European patents, including 10 design patents. We have registered the “CanadianSolar” trademark in the U.S., Australia, Canada, Europe, Korea, Japan, the United Arab Emirates, Hong Kong, Singapore, India, Argentina, Brazil, Peru and more than 20 other countries and we have applied for registration of the “Canadian Solar” trademark in a number of other countries. As of February 28, 2023, we had 123 registered trademarks and 4 trademark applications pending in the PRC, and 146 registered trademarks and 17 trademark applications pending outside of China. These intellectual property rights afford only limited protection and the actions we take to protect our rights as we develop new solar power and battery storage products may not be adequate. Policing the unauthorized use of proprietary technology can be difficult and expensive. In addition, litigation, which can be costly and divert management attention, may be necessary to enforce our intellectual property rights, protect our trade secrets or determine the validity and scope of the proprietary rights of others.

We have limited insurance coverage and may incur significant losses resulting from operating hazards, product liability claims, project construction or business interruptions.

Our operations involve the use, handling, generation, processing, storage, transportation and disposal of hazardous materials, which may result in fires, explosions, spills and other unexpected or dangerous accidents causing personal injuries or death, property damages, environmental damages and business interruption. Although we currently carry third-party liability insurance against property damage, the policies for this insurance are limited in scope and may not cover all claims relating to personal injury, property or environmental damage arising from incidents on our properties or relating to our operations. See “Item 4. Information on the Company—B. Business Overview—Insurance.” Any occurrence of these or other incidents which are not insured under our existing insurance policies could have a material adverse effect on our business, financial condition or results of operations.

We are also exposed to risks associated with product liability claims in the event that the use of our solar power and battery storage products results in injury. See “—Product liability claims against us could result in adverse publicity and potentially significant monetary damages.” Although we carry limited product liability insurance, we may not have adequate resources to satisfy a judgment if a successful claim is brought against us. Moreover, we have entered into agreements with a group of insurance companies with high credit ratings to back up a portion of our warranties. In the event that potential warranty claims exceed the scope or amount of coverage under this insurance, our business could be materially and adversely affected.

For projects we construct, we are exposed to risks associated with the design and construction that can create additional liabilities to our operations. We manage these risks by including contingencies to our construction costs, ensuring the appropriate insurance coverages are in place such as professional indemnity and construction all risk as well as obtaining indemnifications from our contractors where possible. However, there is no guarantee that these risk management strategies will always be successful. Further, some of our PPAs contain provisions that require us to pay liquidated damages if specified completion schedule requirements are not met, and these amounts could be significant.

In addition, the normal operation of our manufacturing facilities may be interrupted by accidents caused by operating hazards, power supply disruptions, equipment failure, as well as natural disasters. While our manufacturing plants in China and elsewhere are covered by business interruption insurance, any significant damage or interruption to these plants could still have a material and adverse effect on our results of operations.

If our internal control over financial reporting or disclosure controls and procedures are not effective, investors may lose confidence in our reported financial information, which could lead to a decline in our share price.

We are subject to the reporting obligations under U.S. securities laws. As required by Section 404 of the Sarbanes-Oxley Act of 2002, the SEC has adopted rules requiring every public company to include a management report on its internal control over financial reporting in its annual report, which contains management’s assessment of the effectiveness of its internal control over financial reporting. In addition, an independent registered public accounting firm must report on the effectiveness of our internal controls over financial reporting. As of December 31, 2022, our management concluded that our internal control over financial reporting was effective. However, we cannot assure you that material weaknesses in our internal controls over financial reporting will not be identified in the future. Any material weaknesses in our internal controls could cause us not to meet our periodic reporting obligations in a timely manner or result in material misstatements in our financial statements. Material weaknesses in our internal controls over financial reporting could also cause investors to lose confidence in our reported financial information, leading to a decline in the market price of our common shares.

We have obtained regulatory approval for the proposed initial public offering of CSI Solar (the “STAR Listing”). The subsequent listing process could be uncertain, time-consuming and costly. We cannot assure you that the STAR Listing will eventually succeed.

On December 13, 2021, the stock listing committee of the Science and Technology Innovation Board (the “STAR Market”) of the Shanghai Stock Exchange determined that CSI Solar, formerly mainly our Module and System Solutions business, had met the offering, listing and disclosure requirements related to its proposed STAR Market listing. CSI Solar will then be required to go through the registration process with the China Securities Regulatory Commission, or the CSRC, before it can complete the listing on the STAR Market. On January 7, 2022, CSI Solar submitted the application documents for registration and the relevant examination and approval materials to CSRC for the offering registration process. On September 30, 2022, the Shanghai Stock Exchange suspended the initial public offering procedures of CSI Solar, because the financial information submitted by CSI Solar in the application documents had expired. On October 17, 2022, CSI Solar secured approval to resume its STAR Listing plans after submitting the financial information required by the Shanghai Stock Exchange. On March 21, 2023, the CSRC approved the STAR Market listing of CSI Solar.

The process of listing a company on the public exchanges in the PRC can be time-consuming and expensive, potentially requiring significant time, resources and focus from our management team. Although we have received approval for the proposed listing, whether we can successfully complete the listing of CSI Solar's shares, the related timeline, actual size and pricing of the offering still depend on various factors, including but not limited to, capital markets conditions in China and globally, the regulatory environment for listing securities, financial performance of CSI Solar Co., Ltd and its ability to fulfill the listing requirements in China.

Due to the complexity of conducting an initial public offering in the PRC, including the factors that are beyond our control, we cannot assure you that we would be able to complete the offering in accordance with our anticipated timeline, size and pricing, or at all. In addition, the process underlying the STAR Listing could result in significant diversion of management time as well as substantial out-of-pocket expenses. If CSI Solar fails to complete the listing process, we may need to seek other sources of funds to realize our business strategy, which may not be available to us at commercially reasonable terms, or at all. Any such inability to obtain funds may have adverse effect on our consolidated operating results and on the price of our common shares.

The market price of our common shares may be volatile or may decline, for reasons other than the risk and uncertainties described above, as the result of investor negativity or uncertainty with respect to the impact of the proposed STAR Listing.

Even if the STAR Listing is completed, we may not achieve the results contemplated by our business strategy (including with respect to use of proceeds from that offering). In addition, it is difficult to predict the effect of the proposed STAR Listing on our common shares.

Even if the STAR Listing is completed, we cannot assure you that we will realize any or all of our anticipated benefits of the STAR Listing. Our completion of the STAR Listing may not have the anticipated effects of strengthening CSI Solar and our market leadership position. If the STAR Listing is completed, CSI Solar will have broad discretion in the use of the proceeds from the STAR Listing, and it may not spend or invest those proceeds in a manner that results in our operating success or with which holders of our common shares agree. Our failure to successfully leverage the completion of the STAR Listing to expand our production capacity in the PRC could pose material adverse effects on our results of operations and consequently result in a decrease in the price of the common shares.

Once CSI Solar is listed in China, it will be subject to the listing and securities law regime of the PRC, and will result in increased legal, accounting and other compliance expenses that it did not incur as a private company. Furthermore, the stock exchanges in China and Nasdaq have different trading hours, trading characteristics (including trading volume and liquidity), trading and listing rules, and investor bases, including different levels of retail and institutional participation. As a result of these differences and given the fact that CSI Solar will remain one of our significant subsidiaries, fluctuations in the price of the shares of CSI Solar due to circumstances peculiar to the PRC capital markets or otherwise could materially and adversely affect the price of our common shares, or vice versa. In addition, investors may elect to invest in our business and operations by purchasing CSI Solar shares in the STAR Listing or on the STAR Market rather than purchasing our common shares despite the lack of fungibility between these shares and ours, and that reduction in demand could lead to a decrease in the market price for the common shares.

Our ownership interest in CSI Solar will be diluted once it becomes a publicly traded company.

As the result of actions being taken in connection with the STAR Listing, including equity raising from China-domiciled investors, CSI Solar is a majority-owned subsidiary of our company. The minority interest in CSI Solar will increase upon completion of the STAR Listing and may diverge from the interests of ours and our other subsidiaries in the future. We may face conflicts of interest in managing, financing or engaging in transactions with CSI Solar, or allocating business opportunities between our subsidiaries.

Currently, we own approximately 80% of CSI Solar's shares, which includes approximately 5% of the shares issued under CSI Solar's employee stock ownership plan that will become effective immediately upon the completion of the STAR Listing. Immediately following the STAR Listing and giving effect to the ownership transfer of CSI Solar's employee stock ownership plan shares and the dilutive effect from the shares newly issued for the STAR Listing, we expect to hold approximately 64% of CSI Solar's shares. As such, our company will retain majority ownership of CSI Solar after the STAR Listing. However, CSI Solar will be managed by a separate board of directors and officers, and those directors and officers will owe fiduciary duties to the various stakeholders of CSI Solar, including shareholders other than our wholly-owned subsidiary. In the operation of CSI Solar's business, the directors and officers of CSI Solar may, in the exercise of their fiduciary duties, take actions that may be contrary to the best interests of our company.

During or after the STAR Listing process, certain requirements of the PRC law, including demands from the CSRC, the Shanghai Stock Exchange or other relevant authorities, may have a bearing on holders of our common shares. In the future, CSI Solar may issue options, restricted shares and other forms of share-based compensation to its directors, officers and employees, which could dilute our company's ownership in CSI Solar, increase our share-based compensation expense, and result in less net income attributable to us from CSI Solar. In addition, CSI Solar may engage in capital raising activities in the future that could further dilute our company's ownership interest.

Our organizational structure will become more complex, including as a result of the process of the STAR Listing. We will need to continue to scale and adapt our operational, financial and management controls, as well as our reporting systems and procedures, at both our Company and CSI Solar. The continued expansion of our organizational structure will require us to commit substantial financial, operational and management resources. In addition, holders of our common shares may have limited opportunities to purchase CSI Solar's shares even if the STAR Listing were completed.

We have granted, and may continue to grant various forms of share-based incentive awards, including performance-based share awards, under our share incentive plan, which may result in increased share-based compensation expenses.

We adopted a share incentive plan in 2006 under which we can grant restricted shares, options and restricted share units to eligible employees, directors and consultants. See "Item 6 Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers" for more details. In particular, in 2020, we granted RSUs to our directors and a group of our key employees, whereby vesting is contingent on the success of the STAR Listing (50% vesting on the IPO date, then 25% vesting each on the first and second anniversaries of the IPO). As such, these RSUs are considered performance-based share awards. As of January 31, 2023, 2,036,000 of such RSUs were unvested and outstanding. For the years ended December 31, 2021 and 2022, we did not record any share-based compensation expenses on these RSUs, as the vesting is dependent upon the consummation of the STAR Listing. We will recognize share-based compensation expenses on these RSUs upon vesting at and after the consummation of the STAR Listing.

We believe the granting of share-based compensation, including performance-based share awards, is of significant importance to our ability to attract, retain and motivate key personnel and employees, and we will continue to grant share-based compensation in the future. As a result, our expenses associated with share-based compensation may increase, which may have an adverse effect on our results of operations. In addition, expenses associated with performance-based share awards may fluctuate greater between periods compared to those associated with time-based share awards.

Our common shares may be prohibited from trading in the United States under the HFCAA in the future if it is later determined that the PCAOB is unable to inspect or investigate completely our auditor. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment.

The Holding Foreign Companies Accountable Act, or the HFCAA, was enacted on December 18, 2020. The HFCAA, which became effective on January 1, 2021, states if the SEC determines that an issuer that is required to file reports under Section 13 or 15(d) of the Securities Exchange Act of 1934, or a registrant, has filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the PCAOB for three consecutive years beginning in 2021, the SEC shall prohibit that registrant's shares or ADSs from being traded on a national securities exchange or in the over-the-counter trading market in the U.S.

In September 2021, the PCAOB adopted a rule related to the PCAOB's responsibilities under the HFCAA, which establishes a framework for the PCAOB to determine, as contemplated under the HFCAA, whether the PCAOB is unable to inspect or investigate completely registered public accounting firms located in a foreign jurisdiction because of a position taken by one or more authorities in that jurisdiction. The rule was approved by the SEC in November 2021.

On December 2, 2021, the SEC adopted final amendments implementing the disclosure and submission requirements of the Holding Foreign Companies Accountable Act, or the HFCAA. The final amendments establish the SEC's procedures for determining whether a registrant is a "Commission-Identified Issuer" under the HFCAA and prohibiting the trading of Commission-Identified Issuer's securities. If the SEC determines that we are a Commission-Identified Issuer under the HFCAA for three consecutive years, or if the audit report filed as part of our annual report with the SEC is otherwise deemed not to be in compliance with the requirements of the Exchange Act due to the Public Company Accounting Oversight Board, or the PCAOB's inability to inspect our auditor, the SEC will prohibit our common shares from being traded on a national securities exchange or in the over-the-counter trading market in the U.S. In the event of such determination, the Nasdaq is expected to delist our common shares.

On December 16, 2021, the PCAOB issued a report to notify the SEC its determinations that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong, and identifies the registered public accounting firms in mainland China and Hong Kong that are subject to such determinations. Our auditor, Deloitte Touche Tohmatsu Certified Public Accountants LLP, the independent registered public accounting firm that issues the audit report included in the Form 20-F, is located in China and is included in the list of PCAOB identified firms in the determination report issued in December 2021.

Consequently, we were conclusively identified as a "Commission-Identified Issuer" on May 26, 2022.

On August 26, 2022, the PCAOB announced that it signed a Statement of Protocol with the CSRC and the Ministry of Finance, which it described as the first step toward opening access for the PCAOB to inspect and investigate completely registered public accounting firms in mainland China and Hong Kong. On December 15, 2022, the PCAOB announced that it has secured complete access to inspect and investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB also vacated its previous determinations issued on December 16, 2021. Therefore, our auditor is currently able to be fully inspected and investigated by the PCAOB. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCAA after we file this annual report on Form 20-F for the fiscal year ended December 31, 2022. Until such time as the PCAOB issues any new determination, we do not expect our securities to be subject to a trading prohibition under the HFCAA.

On December 29, 2022, the Consolidated Appropriations Act, 2023 was signed into law, which, among other things, amended the HFCAA to reduce to number of consecutive years an issuer can be identified a Commission-Identified Issuer before the SEC must impose an initial trading prohibition on the issuer's securities from three years to two years. Therefore, once an issuer is identified as a Commission-Identified Issuer for two consecutive years, the SEC is required under the HFCAA to prohibit the trading of the issuer's securities on a national securities exchange and in the over-the-counter market.

Each year, the PCAOB will determine whether it can inspect and investigate completely audit firms in mainland China and Hong Kong, among other jurisdictions. If the PCAOB determines in the future that it no longer has full access to inspect and investigate completely accounting firms in mainland China and Hong Kong and we use an accounting firm headquartered in one of these jurisdictions to issue an audit report on our financial statements filed with the SEC, we would be identified as a Commission-Identified Issuer following the filing of the annual report on Form 20-F for the relevant fiscal year. In accordance with the HFCAA, our securities would be prohibited from being traded on a national securities exchange or in the over-the-counter trading market in the United States if we are identified as a Commission-Identified Issuer for two consecutive years in the future. The delisting of our common shares, or the threat of their being delisted, may materially and adversely affect the value of your investment. If our common shares are prohibited from trading in the United States, there is no certainty that we will be able to list on a non-U.S. exchange or that a market for our shares will develop outside of the United States. A prohibition of being able to trade in the United States would substantially impair your ability to sell or purchase our common shares when you wish to do so, and the risk and uncertainty associated with delisting would have a negative impact on the price of our common shares. Also, such a prohibition would significantly affect our ability to raise capital on terms acceptable to us, or at all, which would have a material adverse impact on our business, financial condition, and prospects.

If additional remedial measures are imposed on the big four PRC-based accounting firms, including our independent registered public accounting firm, in administrative proceedings brought by the SEC alleging the firms' failure to meet specific criteria set by the SEC, with respect to requests for the production of documents, we could be unable to timely file future financial statements in compliance with the requirements of the Exchange Act.

In late 2012, the SEC commenced administrative proceedings under Rule 102(e) of its Rules of Practice and also under the Sarbanes-Oxley Act of 2002 against the mainland Chinese affiliates of the "Big Four" accounting firms (including the mainland Chinese affiliate of our independent registered public accounting firm). A first instance trial of the proceedings in July 2013 in the SEC's internal administrative court resulted in an adverse judgment against the firms. The administrative law judge proposed penalties on the Chinese accounting firms including a temporary suspension of their right to practice before the SEC, although that proposed penalty did not take effect pending review by the Commissioners of the SEC. On February 6, 2015, before a review by the Commissioner had taken place, the Chinese accounting firms reached a settlement with the SEC whereby the proceedings were stayed. Under the settlement, the SEC accepted that future requests by the SEC for the production of documents would normally be made to the CSRC. The Chinese accounting firms would receive requests matching those under Section 106 of the Sarbanes-Oxley Act of 2002, and would be required to abide by a detailed set of procedures with respect to such requests, which in substance would require them to facilitate production via the CSRC. The CSRC for its part initiated a procedure whereby, under its supervision and subject to its approval, requested classes of documents held by the accounting firms could be sanitized of problematic and sensitive content so as to render them capable of being made available by the CSRC to US regulators.

Under the terms of the settlement, the underlying proceeding against the four PRC-based accounting firms was deemed dismissed with prejudice at the end of four years starting from the settlement date, which was on February 6, 2019. Despite the final ending of the proceedings, the presumption is that all parties will continue to apply the same procedures: i.e. the SEC will continue to make its requests for the production of documents to the CSRC, and the CSRC will normally process those requests applying the sanitization procedure. We cannot predict whether, in cases where the CSRC does not authorize production of requested documents to the SEC, the SEC will further challenge the four PRC-based accounting firms' compliance with U.S. law. If additional challenges are imposed on the Chinese affiliates of the "big four" accounting firms, including our independent registered public accounting firm, we could be unable to timely file future financial statements in compliance with the requirements of the Exchange Act.

In the event that the SEC restarts administrative proceedings, depending upon the final outcome, listed companies in the U.S. with major PRC operations may find it difficult or impossible to retain auditors in respect of their operations in the PRC, which could result in their financial statements being determined to not be in compliance with the requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, including possible delisting. Moreover, any negative news about any such future proceedings against the firms may cause investor uncertainty regarding China-based, U.S.-listed companies and the market price of their shares may be adversely affected.

If our independent registered public accounting firm was denied, even temporarily, the ability to practice before the SEC and we were unable to timely find another registered public accounting firm to audit and issue an opinion on our financial statements, our financial statements could be determined not to be in compliance with the requirements of the Exchange Act. Such a determination could ultimately lead to the delisting of our common shares from Nasdaq, or deregistration from the SEC, or both, which would substantially reduce or effectively terminate the trading of our common shares in the U.S.

Risks Related to Doing Business in China

The enforcement of the labor contract law and increases in labor costs in the PRC may adversely affect our business and our profitability.

The Labor Contract Law came into effect on January 1, 2008, and was later revised on December 28, 2012; the Implementation Rules were promulgated and became effective on September 18, 2008. The Labor Contract Law and the Implementation Rules imposed stringent requirements on employers with regard to executing written employment contracts, hiring temporary employees, dismissing employees, consultation with the labor union and employee assembly, compensation upon termination and overtime work, collective bargaining and labor dispatch business. In addition, under the Regulations on Paid Annual Leave for Employees, which came into effect on January 1, 2008, and their Implementation Measures, which were promulgated and became effective on September 18, 2008, employees who have served for more than one year with an employer are entitled to a paid vacation ranging from five to fifteen days, depending on their length of service, subject to certain exceptions. Employees who waive such vacation time at the request of the employer must be compensated for each vacation day waived at a rate equal to three times their normal daily salary, subject to certain exceptions. According to the Interim Provisions on Labor Dispatching, which came into effect on March 1, 2014, the number of dispatched workers used by an employer shall not exceed 10% of its total number of workers. In addition, according to the PRC Social Insurance Law promulgated in October 2010 and revised in 2018, effective as of December 29, 2018, employees shall participate in pension insurance, work-related injury insurance, medical insurance, unemployment insurance and maternity insurance and the employers shall, together with their employees or separately, pay for the social insurance premiums for such employees.

Furthermore, as the interpretation and implementation of these new laws and regulations are still evolving, we cannot assure you that our employment practice will at all times be deemed fully in compliance, which may cause us to face labor disputes or governmental investigation.

The increase or decrease in tax benefits from local tax bureau could affect our total PRC taxes payments, which could have a material and adverse impact on our financial condition and results of operations.

The Enterprise Income Tax Law, or the EIT Law, came into effect in China on January 1, 2008 and was amended on February 24, 2017 and December 29, 2018. Under the EIT Law, both foreign-invested enterprises and domestic enterprises are subject to a uniform enterprise income tax rate of 25%. The EIT Law provides for preferential tax treatment for certain categories of industries and projects that are strongly supported and encouraged by the state. For example, enterprises qualified as a “High and New Technology Enterprise,” or HNTE, are entitled to a 15% enterprise income tax rate provided that they satisfy other applicable statutory requirements. Further, enterprises which engage in businesses within the scope of the Catalogue of Encouraged Industries in Western Regions promulgated by the NDRC, or Western Catalogue, are entitled to a 15% enterprise income tax rate provided that such enterprises satisfy other applicable statutory requirements.

Certain of our PRC subsidiaries, such as CSI New Energy Holding Co., Ltd., or CSI New Energy Holding, Canadian Solar Manufacturing (Luoyang) Inc., or CSI Luoyang Manufacturing, were once HNTEs and enjoyed preferential enterprise income tax rates. These benefits have, however, expired. In 2022, only Suzhou SanySolar Materials Technology Co., Ltd, Changshu Tegu New Material Technology Co., Ltd, CSI New Energy Development (Suzhou) Co., Ltd (formerly known as Suzhou Gaochuangte New Energy Development Co., Ltd), Canadian Solar Photovoltaic Technology (Luoyang) Co., Ltd. and Changshu Tian Co., Ltd were HNTEs and enjoyed preferential enterprise income tax rates.

If our PRC subsidiaries that have enjoyed preferential tax treatment no longer qualify for the preferential treatment, we will consider available options under applicable law that would enable us to qualify for alternative preferential tax treatment. To the extent we are unable to offset the impact of the expiration of existing preferential tax treatment with new tax exemptions, tax incentives or other tax benefits, the expiration of existing preferential tax treatment may cause our effective tax rate to increase. The amount of income tax payable by PRC subsidiaries in the future will depend on various factors, including, among other things, the results of operations and taxable income of, and the statutory tax rate applicable to, each of the entities. Our effective tax rate depends partially on the extent of the relative contribution of each of our subsidiaries to our consolidated taxable income.

There are significant uncertainties regarding our tax liabilities with respect to our income under the EIT Law.

We are a Canadian company with a substantial portion of our manufacturing operations in China. Under the EIT Law and its implementation regulations, enterprises established outside China whose “de facto management body” is located in China are considered PRC tax resident enterprises and will generally be subject to the uniform 25% enterprise income tax rate on their global income. Under the implementation regulations, the term “de facto management body” is defined as substantial and overall management and control over aspects such as the production and business, personnel, accounts and properties of an enterprise. The Circular on Certain Issues Relating to the Identification of China-controlled Overseas-registered Enterprises as Resident Enterprises on the Basis of Actual Management Organization, or Circular 82, effective as of January 1, 2008, further provides certain specific criteria for determining whether the “de facto management body” of a PRC-controlled offshore incorporated enterprise is located in the PRC. The criteria include whether (a) the premises where the senior management and the senior management bodies responsible for the routine production and business management of the enterprise perform their functions are mainly located within the PRC, (b) decisions relating to the enterprise’s financial and human resource matters are made or subject to approval by organizations or personnel in the PRC, (c) the enterprise’s primary assets, accounting books and records, company seals, and board and shareholders’ meeting minutes are located or maintained in the PRC and (d) 50% or more of voting board members or senior executives of the enterprise habitually reside in the PRC. Although Circular 82 only applies to offshore enterprises controlled by enterprises or enterprise groups located within the PRC, the determining criteria set forth in Circular 82 may reflect the tax authorities’ general position on how the “de facto management body” test may be applied in determining the tax resident status of offshore enterprises. It is unclear under PRC tax law whether we have a “de facto management body” located in China for PRC tax purposes. As of the date of this annual report on Form 20-F, we have not been notified or informed by the PRC tax authorities that we are considered a PRC resident enterprise for the purpose of EIT Law. However, as the tax resident status of an enterprise is subject to the determination by the PRC tax authorities, uncertainties remain with respect to the interpretation of the term “de facto management body” as applicable to our offshore entities. Therefore, there is a risk that we and certain of our non-PRC subsidiaries may be treated as tax residents in the PRC.

Dividends paid by us to our non-PRC shareholders and gains on the sale of our common shares by our non-PRC shareholders may be subject to PRC enterprise income tax liabilities or individual income tax liabilities.

Under the EIT Law and its implementation regulations, dividends paid to a non-PRC investor are generally subject to a 10% PRC withholding tax, if such dividends are derived from sources within China and the non-PRC investor is considered to be a non-resident enterprise without any establishment or place within China or if the dividends paid have no connection with the non-PRC investor’s establishment or place within China, unless such tax is eliminated or reduced under an applicable tax treaty. Similarly, any gain realized on the transfer of shares by such investor is also subject to a 10% PRC withholding tax if such gain is regarded as income derived from sources within China, unless such tax is eliminated or reduced under an applicable tax treaty.

The implementation regulations of the EIT Law provide that (a) if the enterprise that distributes dividends is domiciled in the PRC, or (b) if gains are realized from transferring equity interests of enterprises domiciled in the PRC, then such dividends or capital gains shall be treated as China-sourced income.

Currently, there are no detailed rules applicable to us that govern the procedures and specific criteria for determining the meaning of being “domiciled” in the PRC. As a result, it is not clear how the concept of domicile will be interpreted under the EIT Law. Domicile may be interpreted as the jurisdiction where the enterprise is incorporated or where the enterprise is a tax resident. As a result, if we are considered a PRC “resident enterprise” for tax purposes, it is possible that the dividends we pay with respect to our common shares to non-PRC enterprises, or the gain non-PRC enterprises may realize from the transfer of our common shares or our convertible notes, would be treated as income derived from sources within China and be subject to the PRC tax at a rate of 10% (which in the case of dividends will be withheld at source). Given the resident enterprise status of CSI Solar and our current non-resident enterprise status for tax purposes, in accordance with EIT law and the treaty between China and Canada, if CSI Solar becomes a dividend paying company, 10% of its dividend will be withheld by the PRC.

Under the Law of the People's Republic of China on Individual Income Tax, or the IIT Law, individual income tax is payable on PRC-source dividend income. The implementation regulations of the IIT Law provide that income from dividends derived from companies, enterprises and other economic organizations in China as well as income realized from transfer of properties in China is considered derived from sources inside China, regardless of whether the place of payment was inside China. Therefore, if we are treated as a PRC tax resident enterprise for purposes of the IIT Law, any dividends we pay to our non-PRC individual shareholders as well as any gains realized by our non-PRC individual shareholders or our non-PRC individual note holders from the transfer of our common shares or our convertible notes may be regarded as PRC-sourced income and, consequently, be subject to PRC tax at a rate of up to 20% (which in the case of dividends will be withheld at source).

Such PRC taxes may be reduced by an applicable tax treaty, but it is unclear whether in practice our non-PRC noteholders and shareholders would be able to obtain the benefits of any tax treaties between their country of tax residence and the PRC in the event that we are treated as a PRC resident enterprise.

The investment returns of our non-PRC investors may be materially and adversely affected if any dividends we pay, or any gains realized on a transfer of our common shares, are subject to PRC tax.

Restrictions on currency exchange may limit our ability to receive and use our revenues effectively.

Certain of our revenues and expenses are denominated in Renminbi. If our revenues denominated in Renminbi increase or our expenses denominated in Renminbi decrease in the future, we may need to convert a portion of our revenues into other currencies to meet our foreign currency obligations. Under China's existing foreign exchange regulations, our PRC subsidiaries are able to pay dividends in foreign currencies without prior approval from the State Administration of Foreign Exchange, or SAFE, by complying with certain procedural requirements. However, we cannot assure you that the PRC government will not take further measures in the future to restrict access to foreign currencies for current account transactions.

Foreign exchange transactions by our PRC subsidiaries under most capital accounts continue to be subject to significant foreign exchange controls and require the approval of or registration with PRC governmental authorities. In particular, if we finance our PRC subsidiaries by means of additional capital contributions, the approval of or the record-filing with, certain government authorities, including the Ministry of Commerce or its local counterparts, is required. If our PRC subsidiaries obtain foreign debt through medium and long-term loans or through issuance of bonds, foreign debt approval may also be required to be obtained from the National Development and Reform Commission of PRC, or the NDRC. These limitations could affect the ability of our PRC subsidiaries to obtain foreign exchange through financing.

The rules and regulations in China can change quickly with little advance notice. Uncertainties with respect to the Chinese legal system, as well as changes in any government policies, laws and regulations, could adversely affect the overall economy in China or our industry, which could harm our business.

We conduct a significant portion of our manufacturing operations through our subsidiaries in China. These subsidiaries are generally subject to laws and regulations applicable to foreign investment in China and, in particular, laws applicable to wholly foreign-owned enterprises and joint venture companies. The rules and regulations in China can change quickly with little advance notice.

The PRC legal system is based on written statutes. Prior court decisions may be cited for reference but have limited precedential value. Since 1979, PRC legislation and regulations have significantly enhanced the protections afforded to various forms of foreign investments in China. However, since these laws and regulations are relatively new and the PRC legal system continues to rapidly evolve, the implementation, interpretation and enforcement of many laws, regulations and rules may be inconsistent and change quickly with little advance notice, which may limit legal protections available to us. In addition, any litigation in China may be protracted and may result in substantial costs and divert our resources and the attention of our management.

On March 15, 2019, the PRC National People's Congress approved the 2019 PRC Foreign Investment Law, which came into effect on January 1, 2020 and replaced the trio of existing laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law, and the Wholly Foreign-invested Enterprise Law. On December 26, 2019, the PRC State Council approved the Implementation Rules of Foreign Investment Law, which came into effect on January 1, 2020 and replaced implementation rules and ancillary regulations of the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law, and the Wholly Foreign-invested Enterprise Law. The 2019 PRC Foreign Investment Law and its Implementation Rules embody an expected PRC regulatory trend to rationalize its foreign investment regulatory regime in line with prevailing international practice and the legislative efforts to unify the corporate legal requirements for both foreign and domestic investments. The 2019 PRC Foreign Investment Law specifies that foreign investments shall be conducted in line with the "negative list" and obtain relevant approval to be issued by or approved to be issued by the State Council from time to time. An FIE would not be allowed to make investments in prohibited industries in the "negative list," while the FIE must satisfy certain conditions stipulated in the "negative list" for investment in restricted industries. It is uncertain whether the solar power industry, in which our subsidiaries operate, will be subject to the foreign investment restrictions or prohibitions set forth in the "negative list" to be issued in the future, although it is not subject to the foreign investment restrictions set forth in the currently effective 2021 Negative List. There are uncertainties as to how the 2019 PRC Foreign Investment Law and the Implementation Rules would be further interpreted and implemented. We cannot assure you that the interpretation and implementation of the 2019 PRC Foreign Investment Law made by the relevant governmental authorities in the future will not materially impact the viability of our current corporate structure, corporate governance and business operations in any aspect.

With the trend of strengthening anti-monopoly supervision around the world, the PRC government has promulgated new anti-monopoly and competition laws and regulations and strengthened the enforcement under these laws and regulations, paying more attention to corporate compliance. On February 7, 2021, the Anti-monopoly Commission of the State Council of the PRC promulgated the Guidelines for Anti-monopoly in the field of Platform Economy, which stipulates that any concentration of undertakings involving variable interest entities in Internet industry is subject to anti-monopoly review. On November 15, 2021, the State Administration for Market Regulation of the PRC promulgated the Guidelines for the Overseas Anti-monopoly Compliance of Enterprises. Although we believe that these regulations have little impact on us, there remain uncertainties as to how the laws, regulations and guidelines recently promulgated will be interpreted and implemented. We cannot guarantee that regulators will agree with us or that our business operations comply with such regulations and authorities' requirements in all respects. If any non-compliance is raised by relevant authorities and determined against us, we may be subject to fines and other penalties.

In addition, the PRC government has recently published new policies that significantly affected certain industries such as the education and internet industries. It may in the future release regulations or policies regarding the solar power industry that could adversely affect the business, financial condition and results of operations of us and our industry. Furthermore, the PRC government has recently indicated an intent to exert more oversight and control over overseas securities offerings and other capital markets activities and foreign investment in China-based companies. Future government actions in this regard may hinder our ability to offer securities to investors, and/or may affect the value of our common shares.

The Chinese government has exercised and continues to exercise substantial control over virtually every sector of the Chinese economy. It may intervene or influence the operations of our PRC subsidiaries at any time, which could result in a material change in our operations and the value of our securities.

We conduct our business in China through our PRC subsidiaries in which we hold equity ownership interests. The Chinese government has exercised and continues to exercise substantial control over virtually every sector of the Chinese economy through regulation and state ownership. The ability of our subsidiaries to operate in China may be impaired by changes in its laws and regulations, including those relating to our industry, taxation, land use rights, foreign investment limitations, and other matters. The Chinese government may intervene or influence our operations at any time, which could result in a material adverse change in our operations and the value of our securities.

The central or local governments of China may impose new, stricter regulations or interpretations of existing regulations that would require additional expenditures and efforts on our part to ensure that our PRC subsidiaries comply with such regulations or interpretations. As such, our PRC subsidiaries may be subject to various government actions and regulatory interference in the provinces in which they operate. They could be subject to regulation by various political and regulatory entities, including various local and municipal agencies and government sub-divisions. They may incur increased costs necessary to comply with existing and newly adopted laws and regulations or penalties for any failure to comply.

Government actions in the future, including any decision to intervene or influence the operations of our PRC subsidiaries at any time, may cause us to make material changes to the operations of our PRC subsidiaries, which could result in a material change in the value of our securities. Therefore, investors and our business face potential uncertainties from actions taken by the Chinese government.

Any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer securities to investors and cause the value of our securities to significantly decline or be worthless.

The Chinese government has recently indicated an intent to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers. Any such action could significantly limit or completely hinder our ability to offer or continue to offer securities to investors, and cause the value of such securities to significantly decline or be worthless.

On February 17, 2023, the CSRC issued the Trial Administrative Measures of Overseas Securities Offering and Listing by Domestic Companies and relevant supporting guidelines (collectively, the “Trial Administrative Measures”), which took effect on March 31, 2023. According to the Trial Administrative Measures, a PRC domestic company that seeks to offer and list securities in overseas markets shall fulfill the filing procedure with the CSRC as per requirement of the Trial Administrative Measures. When a PRC domestic company seeks to directly offer and list securities in overseas markets, the issuer shall file with the CSRC. When a PRC domestic company seeks to indirectly offer and list securities in overseas markets, the issuer shall designate a major PRC domestic operating entity, which shall, as the domestic responsible entity, file with the CSRC. Initial public offerings or listings in overseas markets shall be filed with the CSRC within three working days after the relevant application is submitted overseas. If an issuer offers securities in the same overseas market where it has previously offered and listed securities, subsequent filings shall be made with the CSRC within three working days after the offering is completed. In addition, upon the occurrence of any material event, such as change of control, investigations or sanctions imposed by overseas securities regulatory agencies or other relevant competent authorities, change of listing status or transfer of listing segment, or voluntary or mandatory delisting, after an issuer has offered and listed securities in an overseas market, the issuer shall submit a report thereof to CSRC within three working days after the occurrence and public disclosure of such event.

On February 24, 2023, the CSRC, the Ministry of Finance, the National Administration of State Secrets Protection and the National Archives Administration of China issued Provisions on Strengthening Confidentiality and Archives Administration in Respect of Overseas Issuance and Listing of Securities by Domestic Enterprises which became effective on March 31, 2023. These provisions extend the scope of application to overseas indirectly listed enterprises. To provide or publicly disclose to the relevant securities companies, securities service agencies, overseas regulatory authorities and other entities and individuals, or to provide or publicly disclose, through its overseas listing entities, any document or material involving State secrets or work secrets of State agencies, a PRC domestic enterprise shall strictly go through the corresponding procedures, and when providing documents and materials to the relevant securities companies and securities service agencies, PRC domestic enterprises shall provide the relevant securities companies and securities service agencies with a written statement on the secrets. The relevant securities companies or securities service agencies shall properly retain the foregoing written statement for future reference. A PRC domestic enterprise shall perform the corresponding procedures in accordance with the relevant provisions of the Chinese government, if it provides accounting records or photocopies of accounting records to entities and individuals such as the relevant securities companies, securities service agencies and overseas regulatory authorities.

According to the Trial Administrative Measures, PRC domestic companies that have already been listed overseas before March 31, 2023 shall be deemed as existing issuers. Due to the fact that our common shares have been listed on the Nasdaq Global Select Market, we are deemed as an existing issuer, and thus are currently not required to obtain permission or approval from any of the PRC authorities including the CSRC or the CAC or to complete the filing procedures with the CSRC for our historical securities offerings pursuant to the Trial Administrative Measures. Pursuant to the Trial Administrative Measures, we may be required to submit filings to the CSRC in the event that we conduct any securities offerings in the future.

If it is determined in the future that approval from and filing with the CSRC or any other PRC regulatory authorities or other procedures are required for our future offering of securities, it is uncertain whether we can or how long it will take for us to obtain such approval or complete such filing procedures and any such approval or filing could be rejected. Any failure to obtain or delay in obtaining such approval or completing such filing procedures for our future offerings may subject us to sanctions by the CSRC or other PRC regulatory agencies, which may include fines and penalties on our operations in China, limitations on our operating privileges in China, delays in or restrictions on the repatriation of the proceeds from any such offering into the PRC, restrictions on or prohibition of the payments or remittance of dividends by our subsidiaries in China, or other actions that could have a material and adverse effect on our business, reputation, financial condition, results of operations, prospects, as well as the trading price of our common shares. The CSRC or other PRC regulatory agencies may also take actions requiring us, or making it advisable for us, to halt any such offering before the settlement and delivery of the common shares that we may offer. Consequently, if you engage in market trading or other activities in anticipation of and prior to the settlement and delivery of the common shares we offer, you would be doing so at the risk that the settlement and delivery may not occur. In addition, if the CSRC or other regulatory agencies later promulgate new rules or explanations requiring that we obtain their approvals or complete the required filing or other regulatory procedures for any such offering, we may be unable to obtain a waiver of such regulatory requirements. Any uncertainties or negative publicity regarding such approval, filing or other regulatory requirements could materially and adversely affect our business, prospects, financial condition, reputation, and the trading price of our common shares.

Interruption in or failure of information technology, control and communication systems that we manage or that are managed by third parties with which we do business, including cyber-attacks to or other privacy or data security incidents that result in security breaches of these systems, could have an adverse effect on our business, results of operations, and financial condition.

We increasingly rely on information technology systems and network infrastructure that we manage or that are managed by third parties with which we do business to collect, use, transmit, store, dispose of, and otherwise process electronic information. Our or our critical third parties' IT systems and other infrastructure and the information processed in such IT systems could be affected by cybersecurity incidents from a number of causes, including but not limited to, power outages, computer and telecommunication failures, computer viruses, malware, attempts to gain unauthorized access to data and systems, ransomware or other destructive software, manual or usage errors, catastrophic events, natural disasters and severe weather conditions. Attacks, including those targeting IT systems, could severely disrupt business operations and result in significant expense to repair or remediate system damage. Although we have taken steps to protect our IT systems and information maintained in those systems, we have experienced cyber-attacks in the past and we expect attacks and security incidents to increase in the future. Global threat actors and terrorists have targeted and will continue to target entities and projects like ours that operate in the energy and infrastructure sectors, including through disruptive attacks, such as those involving ransomware. We cannot guarantee the security or protection of our IT Systems, information or projects and we have little or no control over the IT Systems and facilities of third parties on which our projects rely. Our defensive measures, including back-up systems and those of critical third parties may fail to timely or effectively anticipate, detect, prevent or allow us to recover from cyberattacks. In addition, our costs to adequately counter the risk of cyber-attacks and to comply with contractual and/or regulatory compliance requirements may increase significantly in the future.

Furthermore, cybersecurity breaches may expose us to a risk of loss or misuse of confidential and proprietary information. Such theft, loss or fraudulent use of information, or other unauthorized disclosure of personal or sensitive data, may lead to high costs to notify and protect the impacted persons. It could also subject us to litigation, losses, liability, fines, or penalties, any of which could materially and adversely affect our results of operations and reputation.

We have implemented various security measures and procedures to protect our IT systems, increase security for information, and monitor and mitigate cybersecurity threats. However, as cybersecurity threats are dynamic, evolving, and increasing in sophistication, magnitude, and frequency, there can be no assurance that such procedures and measures will be successful or sufficient to prevent security breaches from occurring. If any of these potential cybersecurity incidents and corresponding regulatory action were to occur, they could adversely impact our results of operations, due to high additional costs, such as penalties, third-party claims, repairs, increased insurance expense, litigation, remediation, security, and compliance costs.

Failure to comply with governmental regulations and other legal obligations concerning data protection and cybersecurity may materially and adversely affect our business, as we routinely collect, store and use data during the conduct of our business.

We routinely collect, store and use data during our operations including but not limited to the demand and pricing of solar and battery storage products and electricity prices and forecasts, the location and capacity of our production plants, the operational and performance data of solar and battery projects that we provide services to or own, and the information related to our employees, customers and suppliers both in and out of China. We are subject to PRC laws and regulations governing the collecting, storing, sharing, using, processing, disclosure and protection of data on the Internet and mobile platforms as well as cybersecurity. These PRC laws apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries in China, and other parties with which we have commercial relations. On December 28, 2021, the CAC announced the adoption of the Cybersecurity Review Measures, and effective February 15, 2022, online platforms and network providers possessing personal information of more than one million individual user must undergo a cybersecurity review by the CAC when they seek listing in foreign markets. The Measures provide that critical information infrastructure operators purchasing network products and services and data processors carrying out data processing activities, which affect or may affect national security, shall apply for cybersecurity review to the cyberspace administrations in accordance with the provisions thereunder.

On July 30, 2021, the PRC State Council promulgated the Regulations on Protection of Critical Information Infrastructure, which became effective on September 1, 2021. Pursuant to the Regulations on Protection of Critical Information Infrastructure, critical information infrastructure shall mean any important network facilities or information systems of an important industry or field, such as public communication and information service, energy, communications, water conservation, finance, public services, e-government affairs and national defense science, which may endanger national security, peoples' livelihoods and public interest in the event of damage, function loss or data leakage. In addition, relevant administration departments of each critical industry and sector shall be responsible to formulate eligibility criteria and determine the critical information infrastructure operator in the respective industry or sector. The operators shall be informed about the final determination as to whether they are categorized as critical information infrastructure operators. Among these industries, the energy and telecommunications industries are mandated to take measures to provide key assurances for the safe operation of critical information infrastructure in other industries and fields.

Furthermore, the Standing Committee of the National People's Congress passed the Personal Information Protection Law of the PRC, which became effective from November 1, 2021 and requires personal information processing operators, among other regulatory requirements, to obtain a personal information protection certification issued by recognized institutions in accordance with the CAC regulation before such personal information can be transferred out of China.

On September 1, 2022, Measures for the Security Assessment of Outbound Data Transfers and its guideline Guide to Applications for Security Assessment of Outbound Data Transfers (First Edition) promulgated by the CAC took effect. According to the aforementioned rule, a data processor is required to apply to the national cyberspace administration for security assessment of outbound data transfer through local provincial cyberspace administration, if the data processor provides important data abroad. The rule is newly adopted, and it is not certain how the CAC will interpret and enforce it. If we are required to go through a security assessment of outbound data transfer, we will receive a notice on assessment result after completion of the assessment, and we may be notified to terminate the outbound data transfer or make rectification as required. In addition, we have to regulate our outbound data transfer activities in accordance with the applicable laws and regulations on the security management of outbound data transfer and the relevant requirements specified in the notice on assessment result.

As of the date of this annual report, we have not been informed that we are identified as a critical information infrastructure operator by any governmental authorities. We will closely monitor the relevant regulatory environment and will assess and determine whether we are required to apply for the cybersecurity review with the advice of our PRC counsel.

Risks Related to Our Common Shares

We may issue additional common shares, other equity or equity-linked debt securities, which may materially and adversely affect the price of our common shares.

We may issue additional equity, equity-linked debt securities for a number of reasons, including to finance our operations and business strategy (including in connection with acquisitions, strategic collaborations or other transactions), to satisfy our obligations for the repayment of existing indebtedness, to adjust our ratio of debt to equity, to satisfy our obligations upon the exercise of outstanding warrants or options or for other reasons. For example, we issued \$230.0 million of convertible notes in 2020, and we conducted an “at-the-market” offering program of common shares on Nasdaq in 2021, through which we sold 3,639,918 of our common shares and raised US\$150.0 million in gross proceeds before deducting commissions and offering expense. Any future issuances of equity securities or equity-linked debt securities could substantially dilute the interests of our existing shareholders and may materially and adversely affect the price of our common shares. We cannot predict the timing or size of any future issuances or sales of equity, equity-linked or debt securities, or the effect, if any, that such issuances or sales, may have on the market price of our common shares. Market conditions could require us to accept less favorable terms for the issuance of our securities in the future.

The market price for our common shares may be volatile.

The market price for our common shares has been highly volatile and subject to wide fluctuations. During the period from November 9, 2006, the first day on which our common shares were listed on Nasdaq, until December 31, 2022, the market price of our common shares ranged from \$1.95 to \$67.39 per share. From January 1, 2022 to December 31, 2022, the market price of our common shares ranged from \$22.15 to \$47.69 per share. The closing market price of our common shares on December 31, 2022 was \$30.90 per share. The market price of our common shares may continue to be volatile and subject to wide fluctuations in response to a wide variety of factors, including the following:

- announcements of technological or competitive developments;
- regulatory developments in our target markets affecting us, our customers or our competitors;
- actual, projected or anticipated fluctuations in our quarterly operating results;
- changes in financial estimates by securities research analysts;
- changes in the economic performance or market valuations of other solar power companies;
- changes in the volume or quality of our solar and battery storage project development pipeline, and retained assets;
- government incentives on manufacturing, renewable energy and storage projects;
- imposition of new or revised export, import, or doing-business regulations, including trade sanctions, tariffs, and changes in the export licenses;
- the departure of executive officers and key research personnel;
- patent litigation and other intellectual property disputes;
- litigation and other disputes with our long-term suppliers;
- fluctuations in the exchange rates between the U.S. dollars, Renminbi, Euros, Brazilian reals, South African rand, Canadian dollars, Japanese yen, Australian dollars, British pounds and Thai baht;
- the release or expiration of lock-up or other transfer restrictions on our outstanding common shares;
- sales or anticipated sales of additional common shares;
- share repurchase program;
- the success, or the lack thereof, in the completion of the STAR Listing of CSI Solar; and
- future fundraising by us or our public or private subsidiaries.

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 and adverse effect on the price of our common 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. Higher interest rates could also result in fluctuations or depression of the securities market, which may adversely affect the price of our common shares.

Substantial future sales of our common shares in the public market, or the perception that such sales could occur, could cause the price of our common shares to decline.

Sales of our common shares in the public market, or the perception that such sales could occur, could cause the market price of our common shares to decline. As of December 31, 2022, we had 64,506,055 common shares outstanding. The number of common shares outstanding and available for sale will increase when our employees and former employees who are holders of options to acquire our common shares become entitled to the underlying shares under the terms of their options. In the past, in connection with debt financing, we have issued convertible notes, and may issue additional convertible notes that can be converted to our common shares. In 2020, we issued \$230.0 million of convertible notes. From May to November 2021, we conducted an "at-the-market" offering program of common shares on the Nasdaq, through which we sold 3,639,918 of our common shares and raised \$150.0 million in gross proceeds before deducting commissions and offering expenses. To the extent these conversion features are exercised and/or the common shares are sold into the market, the market price of our common shares could decline.

Your right to participate in any future rights offerings may be limited, which may cause dilution of your holdings.

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 U.S. unless we register the rights and the securities to which the rights relate under the Securities Act of 1933, or 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.

Our articles contain certain provisions that could adversely affect the rights of holders of our common shares.

The following provisions in Canadian Solar Inc.'s articles may deprive our shareholders of the opportunity to sell their shares at a premium over the prevailing market price by delaying or preventing a change of control of our company:

- Our board of directors has the authority, without approval from the shareholders, to issue an unlimited number of preferred shares, in one or more series, at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series. See "Item 10. Additional Information—B. Articles" for a more detailed description of the attributes of the preferred shares.
- Our board of directors is entitled to fix and may change the number of directors within the minimum and maximum number of directors provided for in our articles (i.e., a minimum of three and a maximum of ten directors). Our board of directors may appoint one or more additional directors, who shall hold office for a term expiring not later than the close of the next annual meeting of shareholders, but the total number of directors so appointed may not exceed one-third of the number of directors elected at the previous annual meeting of shareholders.

You may have difficulty enforcing judgments obtained against us.

Canadian Solar Inc. is a corporation governed by the laws of the province of Ontario, Canada with operations in North America, South America, Europe, South Africa, the Middle East, Australia and Asia through our operating subsidiaries in which we have equity ownership. Through the equity ownership in our subsidiaries, we primarily conduct our manufacturing operations in China and Southeast Asia, and have made certain investments in solar power system and project assets in China. A majority of our directors and officers are nationals and residents of countries other than the United States (principally Canada, mainland China and Hong Kong) and a substantial portion of the assets of these persons are located outside the United States. As a result, it may not be possible for you to effect service of process within the United States upon those persons. Furthermore, it may not be possible for you to enforce against us or them, in the United States, judgments obtained in U.S. courts, because all or a substantial portion of our assets and the assets of those persons are located outside the United States.

In addition, there is uncertainty as to whether the courts of Canada or the PRC would recognize or enforce judgments of U.S. courts against us or such persons predicated upon the civil liability provisions of the securities laws of the U.S. or any state. In addition, it is uncertain whether such Canadian or PRC courts would be competent to hear original actions brought in Canada or the PRC against us or such persons predicated upon the securities laws of the U.S. or any state.

If a United States person is treated as owning at least 10% of our shares, such person may be subject to adverse United States federal income tax consequences.

If a United States person is treated as owning (directly, indirectly or constructively) at least 10% of the value or voting power of our shares, such person may be treated as a “United States shareholder” with respect to each “controlled foreign corporation,” or CFC, in our group. Where our group includes one or more United States subsidiaries that are corporations for United States federal income tax purposes, in certain circumstances we could be treated as a CFC and certain of our non-United States subsidiaries could be treated as CFCs (regardless of whether or not we are treated as a CFC).

A United States shareholder of a CFC may be required to annually report and include in its United States taxable income its pro rata share of “Subpart F income,” “global intangible low-taxed income” and investments in United States property by CFCs, whether or not we make any distributions. An individual who is a United States shareholder with respect to a CFC generally would not be allowed certain tax deductions or foreign tax credits that would be allowed to a corporation that is a United States shareholder. A failure to comply with these reporting obligations may subject a United States shareholder to significant monetary penalties and may prevent starting of the statute of limitations with respect to such shareholder’s United States federal income tax return for the year for which reporting was due. We do not intend to monitor whether we are or any of our non-United States subsidiaries is treated as a CFC or whether any investor is treated as a United States shareholder with respect to us or any of our CFC subsidiaries, or to furnish to any United States shareholders information that may be necessary to comply with the aforementioned reporting and tax paying obligations. A United States investor should consult its tax advisor regarding the potential application of these rules in its particular circumstances.

We may be classified as a passive foreign investment company, which could result in adverse United States federal income tax consequences to United States Holders of our common shares.

We will be a passive foreign investment company, or PFIC, for United States federal income tax purposes for any taxable year if, applying applicable look-through rules, either (a) at least 75% of our gross income for such year is passive income or (b) at least 50% of the value of our assets (generally determined based on an average of the quarterly values of the assets) during such year is attributable to assets that produce or are held for the production of passive income. Based on the value of our assets and the nature and composition of our income and assets, we do not believe we were a PFIC for United States federal income tax purposes for our taxable year ended December 31, 2022. PFIC status is based on an annual determination that cannot be made until the close of a taxable year, involves extensive factual investigation, including ascertaining the fair market value of all of our assets on a quarterly basis and the character of each item of income that we earn, and is subject to uncertainty in several respects. Moreover, we cannot guarantee that the United States Internal Revenue Service, or IRS, will agree with any positions that we take. Accordingly, we cannot assure you that we will not be treated as a PFIC for any taxable year or that the IRS will not take a position contrary to any position that we take.

Changes in the nature or composition of our income or assets may cause us to be more likely to be a PFIC. The determination of whether we are a PFIC for any taxable year may also depend in part upon the value of our goodwill and other unbooked intangibles not reflected on our balance sheet (which may depend upon the market value of our common shares from time to time, which may be volatile) and also may be affected by how, and how quickly, we spend our liquid assets and cash generated from our operations. Among other matters, if our market capitalization declines, we may be more likely to be a PFIC because our liquid assets and cash (which are for this purpose considered assets that produce passive income) may then represent a greater percentage of the value of our overall assets. Further, while we believe our classification methodology and valuation approach are reasonable, it is possible that the IRS may challenge our classification or valuation of our goodwill and other unbooked intangibles, which may result in our being or becoming a PFIC for the current taxable year or one or more future taxable years.

If we are a PFIC for any taxable year during which a United States Holder (as defined in “Item 10. Additional Information—E. Taxation—United States Federal Income Taxation”) holds our common shares, certain adverse United States federal income tax consequences would generally apply to such United States Holder. See “Item 10. Additional Information—E. Taxation—United States Federal Income Taxation—Passive Foreign Investment Company.”

ITEM 4 INFORMATION ON THE COMPANY

A History and Development of the Company

Canadian Solar Inc. was incorporated under the laws of the Province of Ontario, Canada in October 2001. Since its incorporation, Canadian Solar Inc. has changed its jurisdiction several times as authorized and approved by its shareholders as follows:

- June 1, 2006: continuance from Province of Ontario, Canada jurisdiction to Canadian federal jurisdiction;
- July 23, 2020: continuance from Canadian federal jurisdiction to Province of British Columbia, Canada jurisdiction; and
- July 29, 2022: continuance from Province of British Columbia, Canada jurisdiction to Province of Ontario, Canada jurisdiction.

As a result, Canadian Solar Inc. is governed by the *Business Corporation Act* (Ontario), or the OBCA.

See “—C. Organizational Structure” for additional information on our corporate structure, including a list of our significant subsidiaries.

Our principal executive office and principal place of business is located at 545 Speedvale Avenue West, Guelph, Ontario, Canada N1K 1E6. Our telephone number at this address is (1-519) 837-1881 and our fax number is (1-519) 837-2550. Our agent for service of process in the United States is CT Corporation System, located at 111 Eighth Avenue, New York, New York 10011.

All inquiries to us should be directed to the address and telephone number of our principal executive office set forth above. Our website is www.canadiansolar.com. The information contained on or accessible through our website does not form part of this annual report.

B Business Overview

Overview

We are one of the world’s largest solar technology and renewable energy companies, leading manufacturer of solar photovoltaic modules, provider of solar energy and battery storage solutions, and developer of utility-scale solar and battery storage projects. Our geographic footprint is diversified, as our sales as well as development pipeline in various stages of development are located across North America, South America, Europe, South Africa, the Middle East, Australia and Asia. Our business operations are divided into two business segments, namely CSI Solar and Global Energy.

Under CSI Solar, we design, develop and manufacture solar ingots, wafers, cells, modules and other solar power and battery storage products. We conduct most of our manufacturing operations in China and Southeast Asia. Our products are used for residential, commercial and industrial solar power generation systems. We sell our solar module products primarily under our “Canadian Solar” brand name. We also deliver bankable, end-to-end, utility-scale, turnkey battery storage system solutions across various applications. These storage system solutions are complemented with long-term service agreements which include future battery capacity augmentation services.

During 2022, we launched the SolBank, a lithium iron phosphate (“LiFePO4”) chemistry-based battery storage enclosure with up to 2.8 MWh of usable energy capacity, specifically engineered for utility-scale applications. The SolBank is designed with liquid cooling and humidity control, active balancing BMS (“Battery Management System”) technologies, and complies with the latest international safety and compliance standards. We intend to produce SolBank on fully automated, state-of-the-art production and testing facilities. Our battery storage total annual manufacturing capacity for SolBank was 2.5 GWh in December 2022, and we plan to expand the total annual capacity to 10.0 GWh by December 2023.

Towards the end of 2022, we also launched our residential battery storage product, the “EP Cube”, in the U.S. market and have since also launched the product in Europe and Japan.

Our Global Energy segment primarily comprises solar and battery storage project development and sale, O&M and asset management services for operational projects, sale of electricity, and investment in retained assets. Our expertise spans from sourcing land, interconnection agreements, structuring PPAs, and obtaining permits and other requirements. Our monetization strategies vary between develop-to-sell, build-to-sell, and partial build-to-own, depending on business strategies and market conditions, with the goal of maximizing profits, accelerating cash return, minimizing capital risk, and building recurring income. While we plan to continue to monetize our current portfolio, we also intend to grow our energy business by building up our project development pipeline.

In April 2023, we announced the rebranding of our wholly owned Global Energy subsidiary as Recurrent Energy. Recurrent Energy, previously our North American utility-scale solar and energy storage project developer, now encompasses all our global development and services businesses.

As of January 31, 2023, our solar project backlog, which refers to late-stage projects that have passed their Cliff Risk Date and are expected to be built in the next one to four years, totaled approximately 4.9 gigawatt peak (“GWp”) with 422 megawatt peak, or MWp, in North America, 936 MWp in Europe, the Middle East and Africa (“EMEA”), 2,397 MWp in Latin America, 971 MWp in China, 149 MWp in Japan and 3 MWp in Asia Pacific excluding China and Japan. A project’s Risk Cliff date is the date on which the project passes the last high-risk development stage and varies depending on the country where it is located. This is usually after the projects have received all the required environmental and regulatory approvals, and entered into interconnection agreements and PPAs or feed-in tariff (“FIT”) agreements. Significant majority of projects in backlog are partially or fully contracted with secured PPA or FIT agreements, and the remaining projects are reasonably assured of securing PPAs in the future.

As of January 31, 2023, our solar project advanced pipeline totaled 6.9 GWp. In addition to our solar project backlog and solar project advanced pipeline, as of January 31, 2023, we had 1,775 MWp of solar projects in construction; and a portfolio of solar projects in operation totaling 574 MWp.

As of January 31, 2023, our battery storage project development pipeline totaled 46.9 GWh, including 2,868 MWh of battery storage development backlog and 320 MWh of battery storage projects in construction. As of January 31, 2023, we had 280 MWh net of battery storage in operation, representing a 20% equity interest in the 1,400 MWh Crimson battery storage project in California.

As of January 31, 2023, our battery storage solutions turnkey pipeline totaled 22.6 GWh, which includes both contracted and in construction projects, projects at different stages of the negotiation process, and 2.3 GWh of projects which we manage under long term service agreement (“LTSA”, operational battery storage projects delivered by us that are under multi-year long-term service agreements and generate recurring earnings). See “—Sales, Marketing and Customers—Global Energy Segment—Solar Project Development” and “—Sales, Marketing and Customers—Global Energy Segment—Operating Solar Power and Battery Storage Plants and Sale of Electricity” for a description of the status of our solar and battery storage projects in operation.

We believe that we offer one of the broadest crystalline silicon solar power product lines in the industry. Our product lines range from modules of medium power output to high efficiency, high-power output mono-crystalline modules, as well as a range of specialty products. We currently sell our solar power and battery storage products to a diverse customer base in various markets worldwide, including the U.S., Canada, Germany, Spain, the Netherlands, South Africa, China, Japan, India, Thailand, Australia, Brazil and the U.K. Our customers are primarily distributors, system integrators, project developers and installers/EPC companies.

We employ a flexible vertically integrated business model that combines internal manufacturing capacity with direct material purchases of ingots, wafers and cells. We believe this approach has benefited us by allowing us to grow in a capital-light manner, while giving us significant flexibility to respond to short-term demand changes.

As of December 31, 2022, we had:

- 32.2 GW of total annual solar module manufacturing capacity, approximately 4.4 GW of which is located in Southeast Asia and the rest in China;
- 19.8 GW of total annual solar cell manufacturing capacity, approximately 4.2 GW of which is located in Southeast Asia and the rest in China;
- 20.0 GW of total annual wafer manufacturing capacity located in China; and
- 20.4 GW of total annual ingot manufacturing capacity located in China.

We enter into investment agreements to add vertically integrated manufacturing capabilities. For example, in January 2023, we entered into a multi-year investment agreement with the municipal government of Yangzhou City in Jiangsu Province, China to add 14 GW of annual wafer and cell capacity as phase I of a three-phase plan, expected to commence production in the second half of 2023. We target to expand our solar module, solar cell, wafer and ingot total annual manufacturing capacities to 75.0 GW, 60.0 GW, 50.0 GW and 50.4 GW, respectively, by March 2024, of which 50.0 GW, 50.0 GW, 35.0 GW and 20.4 GW, respectively, is targeted for December 2023.

We intend to use substantially all of the silicon ingots that we manufacture to supply our own silicon wafer plants, substantially all of the silicon wafers that we manufacture to supply our own solar cell plants and substantially all of the solar cells that we manufacture to produce our own solar module products. We also intend to use some of the solar modules we produce in our solar power projects. Our solar module manufacturing costs in China, including purchased polysilicon, wafers and cells, increased from 21.9 cents per watt in December 2020 to 25.2 cents per watt in December 2021, and decreased to 21.8 cents per watt in December 2022. We expect to continue to decrease the manufacturing costs for our production of wafers, cells and modules in the long run, as well as to focus on reducing our manufacturing costs by improving solar cell conversion efficiency, enhancing manufacturing yields and reducing raw material costs.

Our Products and Services

Products Offered in Our CSI Solar Segment

Standard Solar Modules

Our standard solar modules are arrays of interconnected solar cells in weatherproof encapsulation. We produce a wide variety of standard solar modules, ranging from 400W to over 675W in power and using mono-crystalline cells in several different design patterns. We introduced the industry's first module product using 166 mm wafers, in comparison with the conventional 156.75 mm wafers. We also first introduced the highest power 665W module using 210 mm wafers in mass production. Our mainstream solar modules include CS7N (132 half-cells, 210 mm wafer, mono facial and bifacial), CS7L (120 half-cells, 210 mm wafer, mono facial and bifacial), CS6W (144 half-cells, 182 mm wafer, mono facial and bifacial), CS6L (120 half-cells, 182mm wafer, mono facial) and CS6R (108 half-cells, 182 mm wafer, mono facial). The mainstream modules are designed for residential, commercial and utility applications. The small modules are for specialty applications.

We launched our Quartech modules in March 2013. Quartech modules use 4-busbar solar cell technology which improves module reliability and efficiency. CS6P (6 × 10 cell layout) Quartech modules have power output between 255 W and 270 W, which enables us to offer customers modules with high power. We launched and started shipping Dymond modules in October 2014. Dymond modules are designed with double-glass encapsulation, which is more reliable for harsh environments and ready for 1500V solar systems.

We launched and started shipping SmartDC modules in September 2015. SmartDC modules feature an innovative integration of our module technology and power optimization for grid-tied PV applications. By replacing the traditional junction-box, SmartDC modules eliminate module power mismatch, mitigate shading losses and optimize power output at module-level. SmartDC modules also provide module-level data to minimize operational costs and to permit effective system management.

In March 2016, we launched our new Quintech SuperPower mono-crystalline modules. Quintech SuperPower mono-crystalline modules are made of cells with PERC technology and significantly improve module efficiency and reliability. CS6K (6 × 10 cell layout aligned with mainstream dimensions) Quintech SuperPower mono modules have a power output between 285 W and 300 W with high efficiency and high reliability. We started commercial production of Quintech CS6K and CS6U modules in 2016. These modules have features such as 5 busbar cells, standardized module dimensions and cell and module improvements, resulting in higher wattage production and better performance. These modules are intended for broad base introduction, which covers mono-crystalline cells, multi-crystalline cells and mono-crystalline PERC cells.

At the beginning of 2015, we started commercial production of Onyx cells with our in-house developed black silicon technology, Onyx technology. Onyx technology employs a nano-texturing process to make the multi-crystalline cell almost fully black, increasing cell efficiency and module wattage at the same time. We started increasing the production volume of Onyx cells in 2016, which have been incorporated into our Quartech and Quintech module families.

In July 2016, we launched the 1500V System Voltage crystalline solar module portfolio. The 1500V System Voltage crystalline module provides a robust and cost-efficient system solution by adding more modules in a string, which decreases the number of combiner boxes, direct current homeruns and trenching. This unique product design improves the overall system performance and efficiency and reduces labor cost and installation time.

In 2017, we launched the Ku module series which results in an improvement in failure redundancy with innovative cell matrix interconnection technology. The module power output is enhanced by up to 10 Watt per module while reducing the module working temperature. We developed P4 cell technology, which is multi-crystalline PERC technology. The combination of P4 cell and Ku module technologies enable us to offer customer higher wattage and more reliable multi crystalline module products. We also launched and shipped High Density Module ("HDM") product to some markets this year. The HDM offers high wattage, high module efficiency and pleasant aesthetics for residential applications.

In 2018, we launched the BiKu modules which are bifacial designed and can generate additional electricity from the backside of the module. These modules have more shading tolerance and a much lower hot spot risk thanks to the innovative design on the bifacial cell and double glass module. At the end of 2018, we began the mass production of the HiKu module, the first commercially available multi-crystalline module exceeding 400 watts with significant leveled cost of energy, or LCOE, advantages. In 2018, we launched the HiDM module, which is an upgrade of the HDM module and uses shingled cells to increase both module wattage and efficiency. We also launched P5 technology, which is based on casted mono technology developed in house, and will boost cell and module efficiencies close to mono while retaining all the advantages of multi technology, such as LID, LeTID and lower cost.

In 2019, we continued to expand our high-power module product portfolio based on 166 mm wafers. In July 2019, we started to mass-produce BiHiKu modules. BiHiKu is a bifacial module utilizing our 166 mm P4 (multi PERC) cells which have a front side power output exceeding 400 watts. In addition to modules utilizing our 166 mm P4 (multi PERC) cells, we launched HiKu and BiHiKu modules using 166 mm P5 (casted mono) and mono PERC cells. Our CS3L (120 half-cells, 166 mm wafer) mono PERC modules can achieve power output exceeding 360 watts, which is suited for residential applications, and our CS3W (144 half-cells, 166 mm wafer) mono modules can reach wattages up to 445 watts. By August 2019, we converted 100% of our cell production capacity into PERC and by the end of 2019, over one-third of our module capacity was for HiKu and BiHiKu. For the residential market, we ramped up the all-black version of our HiDM module with appealing aesthetics and high module efficiency. Our full-cell modules such as CS6K and CS6U are gradually being phased out and replaced by Ku, BiKu and HiDM modules. In 2019, we also officially phased out all the double glass mono-facial modules due to the introduction of the more competitive bifacial modules.

In 2020, we continued to launch high power modules using bigger wafers. In July 2020, we introduced CS3Y (156 half-cells, 166 mm wafer) module to the market. The power wattage of the HiKu series modules is further enhanced to 490W to accommodate the needs of our customers. Several new technologies were first used in this new module and were further used in the HiKu6 and HiKu7 modules launched later. Smaller gap between cells brings the blank area down by 70% on the module surface, and helps to increase the module efficiency by 0.3%. Hetero ribbon (“HTR”) and flexible welding process further facilitates the smart interconnection without causing additional microcracks, especially on bigger modules. In November 2020, we began mass production of CS6W (144 half-cells, 182 mm wafer) module. The module power of CS6W is up to 550W. HiKu7, the power module with the highest power output, was then brought to market in December 2020, including HiKu7L (120 half-cells, 210 mm wafer), and HiKu7N (132 half-cells, 210 mm wafer). The module power of HiKu7L reaches 595W while HiKu7N reaches 665W. 210 mm wafer based modules HiKu7 has been our standard offering since 2020. For the residential market, we introduced HiDM-all black modules and HiKu3L-all black module with appealing aesthetics. We also introduced HiKu-Lite module with less weight for loading-limited installation locations. We are among the first few companies to supply light weight modules in Japan.

In 2021, we expanded our manufacturing capacity for the HiKu6 (182 mm wafers) and HiKu7 (210 mm wafers) series modules. We invested in a research and production pilot line for Heterojunction (“HJT”) solar cells and modules, which uses in-house developed N-type mono-silicon ingots and wafers. Based on our high efficiency HJT cells, we introduced 6R-H-AG (108 half-cells, 182 mm wafer) with module power up to 440W to cater to the residential market. To satisfy residential customers who frequently experience strong wind loads, we introduced a mechanically enhanced version of CS3N (132 half-cells, 166 mm wafer) in 2021. Also, as modules with larger wafers (182 mm and 210 mm) were gaining market share, we developed CS6R (108 half-cells, PERC technology, 182 mm wafers) for the global residential market in 2021. CS6R has module power up to 420W and was introduced in 2022. Furthermore, we embarked on the development of N-type wafer-based modules with TOPCon technology. Our in-house TOPCon manufacturing capability will be integrated from N-type ingot growth, wafering, cells to modules. We started to deliver the 182mm cell based TOPCon modules in April 2023, and the 210 mm cell based TOPCon modules are expected to be commercially available later in 2023.

In March 2022, we successfully established a pilot line for TOPCon cells and produced the first piece of TOPCon cell with an average cell efficiency of up to 24% and a yield over 98% by September 2022. With mass production, the cell efficiency reached 25%, which is 1.3% higher than the average efficiency of PERC cells in the market. We named our new module products, TOP(Bi)HiKu6 and TOP(Bi)HiKu7, which includes the 182 mm cell based bifacial TOPBiHiKu6 (555W-570W) and monofacial TOPHiKu6 (420W-575W) modules, and the 210 mm cell based bifacial TOPBiHiKu7 (615W-690W) modules. All certifications and reliability tests were completed in December 2022. We started to deliver the 182 mm cell based TOPCon modules in April 2023 and will commence mass production of the 210 mm cell based TOPCon modules later in 2023.

The TOPCon modules will solidify our product and technology leadership and further increase customers’ return on investment. Firstly, temperature coefficient of our TOPCon modules is as low as -0.29%/°C, making them perform better under hot environments compared to mainstream module products. Secondly, they do not suffer from boron-oxygen related LID (“Light Induced Degradation”), resulting in less power degradation. Thirdly, the power degradation of the TOPCon modules was only 1.0% after 2,000 hours of damp and heat (DH2000) test, compared to 1.9% degradation of PERC modules under similar tests. Furthermore, the bifaciality of TOPCon bifacial modules can reach up to 85%, with a significant power gain of around 2% compared to PERC bifacial modules under similar field conditions.

In 2022, we developed a steel frame module based on (monofacial and bifacial) CS6W and CS7N for utility-scale markets due to the lower carbon footprint compared to aluminum frame modules. We have an inhouse-designed steel frame with special cross-section structure to improve cost-performance ratio.

With the goal of carbon neutrality, the commercial and industrial roof market has rapidly developed. In this market, customers need not only a photovoltaic module but also an integrated system solution. In June 2022, we initiated the development of BIPV ("Building Integrated Photovoltaic") products and have completed the design of all components of the whole system, including a customized tin roof, PV module, and special designed clamp that have advantages in both better appearance and higher reliability. We expect to commence construction of the pilot project for our BIPV system in China in May 2023, and we expect this system to be launched later in 2023.

Our standard solar modules are designed to endure harsh weather conditions and to be transported and installed easily.

Utility-scale Battery Storage

Our utility-scale battery storage offering includes proprietary products, technology and integrated solutions focused on delivering high performance, safe and reliable battery storage solutions to enable utilities, independent power producers, and energy investors and users achieve energy savings, while maintaining power reliability and resilience. Our battery storage solutions are utilized across the various market sectors, including high voltage grid scale, commercial and industrial business, and residential homes. Battery storage helps to provide the balance of energy delivery with energy consumed, including absorption of excess energy in the systems and release for when it is needed.

Battery storage demand is growing for various utility grid opportunities and applications including energy arbitrage, reserve capacity, flexible peaking and resource adequacy, as well as grid frequency regulation and voltage control. We have successfully introduced our high-energy and high-power storage power block with integrated lithium-ion phosphate batteries designed to meet market demand for 1 to 4 hours of battery storage duration. Our turn-key offering includes the integrated battery, power conversion systems and the energy management system. We also offer comprehensive services and capabilities with these project installations, including consulting and project engineering, procurement, and construction ("EPC") management.

Furthermore, we support our installed projects using our capabilities to offer contracted long term services contract commitments that include operation and maintenance, capacity augmentation, system performance level, warranty, and other services throughout the operational phase of the projects.

To leverage our significant growth and advancement into the global battery storage market, we are investing significantly into our developing our own battery storage proprietary products, technologies, and manufacturing. For example, in 2021, we started designing and developing proprietary DC battery storage systems, including battery modules and packs, under the "SolBank" product brand name. During 2022, we launched the SolBank, a LiFePO4 chemistry-based battery storage enclosure with up to 2.8 MWh of usable energy capacity, specifically engineered for utility-scale applications. Our battery storage total annual manufacturing capacity for SolBank was 2.5 GWh in December 2022, and we plan to expand the total annual capacity to 10.0 GWh by December 2023.

Residential Battery Storage

In late 2022, we launched our residential battery storage product, EP Cube, in the U.S. market and have since also launched the product in Europe and Japan. EP Cube is our residential all-in-one energy storage solutions that allow users to increase the efficiency of their self-consumption solar PV installations by storing, managing and using the electricity generated with their own PV system.

Solar System Kits

A solar system kit is a ready-to-install package consisting of solar modules produced by us and components, such as inverters, racking system and other accessories, supplied by third parties. We began selling solar system kits in 2010. In 2022, we sold them primarily to customers in China, Japan and Brazil.

Power Electronic Products

Our power electronic products include on-grid inverters, storage PCS, system accessories, and smart energy management platforms. We design, develop, and manufacture power electronic products, aiming to provide our customer cost-effective, reliable, one-stop smart energy solutions. Our inverter products cover a power range from 3 kW to 125 kW, which are suitable for residential, C&I, and ground-mounting applications. The 110 kW to 125 kW series is targeted for the C&I applications due to its higher power rating, modular IGBT integrated design, and patented thermal management design. To date, we have sold more than 3GW of inverters cumulatively.

EPC Services

Our EPC services are a complete turnkey solutions for utility scale PV projects, including system design, procurement, installation, system testing and commissioning.

We provide EPC services in China to ground-mounted solar projects, as well as to large-scale distributed system projects for C&I customers.

Long-term service agreements (LTSA)

We are managing 2.3 GWh of projects under LTSA, which are operational battery storage projects delivered by us that are under multi-year long-term service agreements.

Products and Services Offered in Our Global Energy Segment

Solar and Battery Storage Project Development and Sale

We develop, build and sell solar and battery storage projects. Our Global Energy business develops projects primarily in the U.S., Canada, Japan, China, the EU, the U.K., Brazil, Mexico, Chile, Colombia, Australia and Taiwan. Our global project development activities include sourcing land, interconnection agreements, structuring PPAs, obtaining permits and other requirements.

We have experienced continued pipeline expansion and strong project development. As of January 31, 2023, we had a total global solar pipeline of 24.7 GWp and an energy storage project development pipeline of 46.9 GWh.

We actively pursue suitable buyers for our solar and battery storage projects. See “—Sales, Marketing and Customers—Global Energy Segment—Solar Project Development” for a description of the status of our solar and battery storage projects.

Operating Solar Power Plants and Sale of Electricity

We operate certain of our solar power plants and generate income from the sale of electricity. The electric power generated by our solar power projects will generally be sold under long-term PPAs with public utilities, licensed suppliers, corporate offtakers, and commercial, industrial or government end users. As of January 31, 2023, we had a fleet of solar power plants in operation with an aggregate gross capacity of approximately 574 MWp. Furthermore, we increasingly hold and accumulate assets through investment vehicles in order to better capture asset value.

O&M Services

In 2022, we provided O&M services in North America, Europe, Japan and Australia. O&M services include monitoring, inspections, repair and replacement of project equipment and site management and administrative support services for solar projects in operation. We have deployed a number of unique technologies including semi-automated module washing, autonomous vegetation management, machine learning technologies in predictive maintenance and drone inspection. We continue to invest in developing these technologies and other areas of our service offering.

Asset Management Services

In 2022, we provided asset management services primarily in North America and Japan.

Supply Chain Management

CSI Solar Segment

Our CSI Solar segment depends on our ability to obtain a stable and cost-effective supply of polysilicon, solar ingots, wafers and cells. Our silicon wafer agreements set forth price and quantity information, delivery terms and technical specifications. While these agreements usually set forth specific price terms, most of them also include mechanisms to adjust the prices, either upwards or downwards, based on market conditions. Over the years, we have entered into a number of long-term supply agreements with various silicon and wafer suppliers in order to secure a stable supply of raw materials to meet our production requirements. Under our supply agreements with certain suppliers, and consistent with historical industry practice, we make advance payments prior to scheduled delivery dates. These advance payments are made without collateral and are credited against the purchase prices payable by us. In 2022, we purchased all of our silicon raw materials used in our solar modules from third parties. We have entered into long-term supply purchase agreements, primarily for silicon raw materials. We plan to continue to diversify our external polysilicon and wafer suppliers.

We purchase solar cells from a number of international and local suppliers primarily in China, in addition to manufacturing our own solar cells and having toll manufacturing arrangements with our solar cell suppliers. Our solar cell agreements set forth price and quantity information, delivery terms and technical specifications. These agreements generally provide for a period of time during which we can inspect the product and request the seller to make replacements for damaged goods. We generally require the seller to bear the costs and risks of transporting solar cells until they have been delivered to the location specified in the agreement. As we expand our business, we expect to increase our solar cell manufacturing capacity and diversify our solar cell supply channel to ensure we have the flexibility to adapt to future changes in the supply of, and demand for, solar cells.

For risks relating to the long-term agreements with our raw material suppliers, see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Long-term supply agreements may make it difficult for us to adjust our raw material costs should prices decrease. Also, if we terminate any of these agreements, we may not be able to recover all or any part of the advance payments we have made to these suppliers and we may be subject to litigation.”

Global Energy Segment

Our CSI Solar segment supplies part of the solar modules used in our Global Energy segment. We leverage on our scale of operations and have increasingly consolidated our procurement operations. With centralized procurement, we believe we are able to secure more competitive arrangements with our major suppliers for our project construction, thereby enhancing our ability to compete on cost given the large procurement quantities.

Manufacturing, Construction and Operation

CSI Solar Segment

We assemble our solar modules by interconnecting multiple solar cells by tabbing and stringing them into a desired electrical configuration. We lay the interconnected cells, laminate them in a vacuum, cure them by heating and package them in a protective lightweight anodized aluminum frame or steel frame. We seal and weatherproof our solar modules to withstand high levels of ultraviolet radiation, moisture and extreme temperatures.

We mostly use automated equipment to enhance the quality and consistency of our finished products and to improve the efficiency of our manufacturing processes. Key equipment in our manufacturing process includes automatic laminators, simulators and solar cell testers. The design of our assembly lines provides flexibility to adjust the ratio of automated equipment to skilled labor in order to maximize quality and efficiency.

Global Energy Segment

We develop, construct, maintain, sell and/or operate solar and battery storage projects in the U.S., Canada, Japan, China, the EU, the U.K., Brazil, Mexico, Argentina, Chile, Colombia, Australia and Taiwan. We engage in all aspects of the development and operation of solar and battery storage projects, including project selection, design, permitting, engineering, procurement, construction, installation, monitoring, operation and maintenance. For the solar and battery storage projects that we construct, we have the option of either using our own team, hiring third-party contractors, or a combination of both.

Our solar and battery storage projects development process primarily consists of the following stages:

- **Market due diligence and project selection.** We search for project opportunities globally with the goal of maintaining a robust and geographically diversified project portfolio. Our business team closely monitors the global solar and battery storage projects market and gathers market intelligence to identify project development opportunities. Our development team prepares market analysis reports, financial models and feasibility studies to guide us in evaluating and selecting solar and battery storage projects. As we consider undertaking new solar and battery storage projects, we weigh a number of factors including location, local policies, political and regulatory environment, financing costs and potential returns.
- **Financing.** We typically include financing plans for our projects in our financial models and feasibility studies. We finance our projects through our working capital and debt financing from local banks or international financing sources that require us to pledge project assets or provide parent guarantees.
- **Permitting and approval.** We either obtain the permits and approvals necessary for solar and battery storage projects ourselves or we acquire projects that have already received the necessary permits and approvals. The permitting and approval process for solar and battery storage projects varies from country to country and often from region to region within a country.

- *Project design, engineering, procurement and construction.* Our engineering team generally designs solar and battery storage projects to optimize performance while minimizing construction and operational costs and risks. The engineering design process includes the site layout and electrical design as well choosing the appropriate technology, in particular module, inverter and battery storage system configuration. We generally use solar modules and battery storage products produced by us and by third-party manufacturers, and procure inverters and other equipment from third-party suppliers.

Currently, we have operating solar projects in Brazil, Japan, Argentina, China and Mexico. After a project is connected to the grid, we regularly inspect, monitor and manage the project site with the intention to maximize the utilization rate, rate of power generation and system life of the project.

We operate a monitoring center in Guelph, Ontario, Canada, which adopts the global monitoring platform (“CSEye”) to monitor the operational performance data in real time, to automatically receive alerts about exceptions, and to automate the reporting of performance, technician work orders, warranty claims, spare parts, health and safety incidences, manage system alarms and reports, all of which can be accessed through cloud applications. Our proprietary algorithms analyze the performance of the self-owned and third party power plants that we operate and maintain on a daily basis and identify potential problems. For example, they raise alarms when inverters or strings are under-performing.

Quality Control and Certifications

We have registered our quality control system according to the requirements of ISO9001:2008 standards. TÜV Rheinland Group, a leading international service company that documents the safety and quality of products, systems and services, audits our quality systems. We inspect and test incoming raw materials to ensure their quality. We monitor our manufacturing processes to ensure quality control and we inspect finished products by conducting reliability and other tests.

We also maintain various international and domestic certifications for our solar modules. For example, we have obtained IEC6121561730 certifications for sales of our modules in Europe, UL61730 certifications for sales of our modules in North America, and other necessary certifications for sales of our modules in China, Japan, Korea, India, Brazil, Australia, Colombia, Israel, Italy, Great Britain and Indonesia, etc. The IEC certification is issued by Verband Deutscher Elektrotechniker, or VDE, and the UL certification by Canadian Standards Association, or CSA. Our module products satisfy the latest standards, including IEC 61215, IEC61730, UL61730 and regional regulations, and have achieved high California Energy Commission, or CEC, PVUSA test condition ratings. Further, our module products have passed additional extended stress program qualifications such as salt mist testing, ammonia testing, PID testing, as well as extra-standard or multiple times testing programs with many variants from PVEL or VDE. We also continuously improve all required steps of silicon, ingot, wafer, cell and module to maintain competitiveness of carbon footprint certification for the French market special tender requirements. In 2022, we obtained Italy Environmental Product Declaration certification, or EPD, which focuses on the assessment of carbon emissions, energy consumption, and waste generation of a solar module’s whole life cycle, following ISO14040, ISO14044, ISO14025 and EN15804 for Italy market.

Our PV test laboratory is accredited by CNAS according to ISO17025 quality management standard, and has been approved into various Data Acceptance Program, namely by CSA, VDE, and the China General Certification, or CGC, in China. The PV test laboratory allows us to conduct some product certification testing in-house, which decreases time-to-market and certification costs, as well as exhaustive product and component reliability research to drive improvements in product durability.

Sales, Marketing and Customers

The following table sets forth, for the periods indicated, certain information relating to our total net revenues derived from our customers categorized by their geographic locations. The information presented below is based on the location of customers’ global or regional headquarters, as appropriate:

Region	Years Ended December 31,					
	2020		2021		2022	
	Total Net Revenues	%	Total Net Revenues	%	Total Net Revenues	%
Asia	1,620,840	46.6	2,139,070	40.5	2,739,779	36.7
Americas	1,221,105	35.1	2,279,594	43.2	2,793,651	37.4
Europe and others	634,550	18.3	858,505	16.3	1,935,180	25.9
Total	3,476,495	100.0	5,277,169	100.0	7,468,610	100.0

CSI Solar Segment

Our primary customers are distributors, system integrators, project developers and installers/EPC companies. A small number of customers have historically accounted for a significant portion of our net revenues. In 2020, 2021 and 2022, the top five customers of the CSI Solar segment by net revenues collectively accounted for approximately 15.8%, 14.0% and 13.0%, respectively, of our total net revenues. Sales to our largest customer in these years accounted for 3.9%, 3.9% and 4.9%, respectively, of our total net revenues.

We market and sell solar modules worldwide for residential, commercial and utility-scale solar energy projects and solutions. We primarily sell our products to distributors and large-scale installers through our own, home-grown sales teams, who operate throughout Europe, the Americas, the Middle East and the Asia-Pacific regions.

Our marketing activities include brand sponsorship, social media discussions and digital marketing. Our teams also develop channel marketing programs to support our customers in their marketing of our business and products, in addition to providing them with various services such as product training, new product briefing, and sales training. Furthermore, our marketing team focuses heavily on public relations and crisis management to safeguard our public image. By working closely with our sales teams and other leading solar research companies, our marketing team provides up-to-date market information on a constant basis, supporting the efforts of our sales team. Our marketing staff is located throughout the Americas, China, Europe, Japan and Australia.

We sell our standard solar module products primarily under three types of arrangements: sales contracts to distributors; sales to systems integrators, installers/EPC companies and project developers; and OEM/tolling manufacturing arrangements.

We target our sales and marketing efforts for our specialty solar products at companies in selected industry sectors, including the automotive, telecommunications and LED lighting sectors. As standard solar modules increasingly become commoditized and technology advancements allow solar power to be used in more off-grid applications, we intend to increase our sales and marketing efforts on our specialty solar products and capabilities. Our sales and marketing team works with our specialty solar products development team to take into account changing customer preferences and demands to ensure that our sales and marketing team is able to effectively communicate to customers our product development changes and innovations. We intend to establish additional relationships in other market sectors as the specialty solar products market expands.

As we expand our manufacturing capacity and enhance our brand name with our system solutions offering, we continue to develop new customer relationships in a wider range of geographic markets to further decrease single market dependency. Since 2013, we significantly increased our total number of buying customers and achieved leading market share in North America, Canada, Japan, South-Africa and Brazil, which we maintained and grew further. In 2021, we started to produce and sell our own CSI single-phase inverter portfolio to complement the already established and growing overall CSI branded inverter sales. We were one of the leading turnkey EPC PV-system providers in Australia in 2018 and 2019 and a key system kits/packages and turnkey system provider in Brazil since 2018. In the U.S., we have been recognized as a top 10 system/inverter supplier since 2019. We have shifted away from the full EPC service model and are now offering and helping our customers with system design and system optimization simulation and support. In 2022, we have successfully launched our first CSI developed and manufactured 3-phase string inverter for commercial and small utility-scale applications and we plan to further grow our own CSI string inverter portfolio.

In general, we are continuously growing our direct sales channel to sell modules and other solar system components (as system packages or as stand-alone components) directly to EPC, developer as well as contractor and installer, to lower customer concentration and to reduce payment risks and demand fluctuation risks. In order to access small contractors and installers which we do not directly serve, we maintain a strong sales channel and business relationship with key distribution partners. In parallel, we have expanded our key account and utility-scale sales channel and gained market share as we benefited from a global growth in demand for mid-scale to large-scale solar power plants, enabled through our high efficiency large format module portfolio for LCOE optimized large commercial and utility-scale project usage.

Solar System Kits

A solar system kit is a ready-to-install package consisting of solar modules produced by us and components, such as inverters, racking system and other accessories, supplied by third parties. In 2022, we sold approximately 2.1 GW of system kits primarily in China, Japan and Brazil.

Battery Storage Solutions

We leverage our vast customer and supply chain network to offer competitive solutions for stand-alone battery storage offerings or “Photovoltaic + Storage” hybrid integrated solutions. We also continue to prioritize our R&D and investments into battery storage product and technology development to further our advancement into downstream product, technology, and manufacturing as well as upstream project integrated battery storage solutions. As a result, we have launched in 2022, our CSI developed utility-scale battery storage solution, SolBank, with up to 2.8 MWh of usable energy capacity per unit. This solution is specifically engineered for utility-scale grid connected battery capacity storage installations in stand-alone projects or hybrid projects, in conjunction with renewable energy generation equipment such as wind or solar power technologies. In addition, CSI has launched its own residential battery storage system, EP Cube, focusing on residential and small commercial battery storage installations of up to 120 kWh. With this solution, we expect generated solar power can be stored for usage during subsequent electricity peak rate periods, for peak consumption shaving, and for independent or resilient power supply in case of emergencies and grid outages.

As of January 31, 2023, our battery storage solutions turnkey pipeline totaled 22.6 GWh, which includes both contracted and in construction projects, projects at different stages of the negotiation process, and 2.3 GWh of projects which we manage under long term service agreement (“LTSA”, operational battery storage projects delivered by us that are under multi-year long-term service agreements and generate recurring earnings).

Global Energy Segment

We develop, construct, maintain, sell and/or operate solar power and battery storage plants primarily in the U.S., Canada, Japan, China, the EU, the U.K., Brazil, Mexico, Argentina, Chile, Colombia, Australia and Taiwan. We also provide O&M and assets management services. We sell our projects to large utility companies or grid operators. Customers for our O&M and asset management services include solar project developers and owners.

In order to continue to grow our Global Energy segment, we conduct market due diligence, routinely meet with industry operators and interested investors, and attend industry conferences and events to identify project development opportunities.

Solar Project Development

As of January 31, 2023, our total project pipeline was 24.7 GWp, consisting of 1.8 GWp under construction, 4.9 GWp of backlog, 6.8 GWp of advanced pipeline, and 11.2 GWp of earlier stage pipeline.

Backlog projects are late-stage projects that have passed their Risk Cliff date and are expected to start construction in the next 1-4 years. A project’s risk cliff date is the date on which the project passes the last high-risk development stage and varies depending on the country where it is located. This is usually after the projects have received all the required environmental and regulatory approvals, and entered into interconnection agreements, feed-in tariff (“FIT”) arrangements and PPAs. Significant majority of projects in backlog are contracted (i.e., have secured a PPA or FIT), and the remaining are reasonably assured of securing PPAs.

Advanced pipeline projects are mid-stage projects that have secured or have more than 90% certainty of securing an interconnection agreement. Early-stage Pipeline projects are early-stage projects controlled by Canadian Solar that are in the process of securing interconnection.

The following table presents our total project pipeline.

Region	Total Project Pipeline by Region as of January 31, 2023 (in MWp)*				Total
	In construction	Backlog	Advanced Pipeline	Early-Stage Pipeline	
North America	—	422	2,310	4,324	7,056
Latin America	1,400	2,397	908	510	5,215
EMEA	89	936	3,509	2,803	7,337
Japan	36	149	3	55	243
Asia Pacific excluding Japan and China	—	3	135	2,058	2,196
China	250	971	—	1,475	2,696
Total	1,775	4,878	6,865	11,225	24,743

Note: Total project pipeline represents the gross MWp size of the projects owned by us and our non-controlling interest.

Operating Solar Power and Battery Storage Plants and Sale of Electricity

In addition to our project backlog, we had a portfolio of solar power plants in operation totaling 574 MWP as of January 31, 2023.

Our total portfolio of solar power plants in operation as of January 31, 2023 was as follows:

Solar Power Plants in Operation (in MWP)					
Latin America	Japan	Asia Pacific excluding Japan and China	China	Total	
336	140	12	86	574	

Note: Solar power plants in operation represents the proportionate net MWP owned by us

Battery Storage Project Development

We have been actively developing utility-scale solar plus battery storage hybrid projects, as well as stand-alone battery storage projects. Since early 2021, nearly all our projects under development include the co-hosting of battery storage facilities with solar power plants on the same piece of land. By using a single interconnection point for each project to serve the solar and battery storage energy load, we expect to significantly enhance the efficiency and the value of our battery storage development pipeline.

In addition, our track record includes several storage tolling agreements with a variety of power purchasers, including community choice aggregators, investor-owned utilities, universities, public utility districts, and development services agreements to retrofit operational solar projects with battery storage, many of which were previously developed by us.

The table below sets forth our storage project development backlog and development pipeline as of January 31, 2023.

Storage Project Backlog and Development Pipeline by Region as of January 31, 2023 (in MWP)

Region	In construction	Backlog	Advanced Development Pipeline	Early-Stage Development Pipeline	Total
North America	—	—	4,098	15,382	19,480
Latin America	—	2,300	1,650	970	4,920
EMEA	—	110	2,620	9,999	12,729
Japan	—	—	—	19	19
Asia Pacific excluding Japan and China	20	458	—	1,640	2,118
China	300	—	—	7,300	7,600
Total	320	2,868	8,368	35,310	46,866

As of January 31, 2023, we had 280 MWh net of battery storage in operation, representing a 20% equity interest in the 1,400 MWh Crimson battery storage project in California.

Customer Support and Service

We typically sell our standard solar modules with a fifteen year or twenty-five year warranty against defects in materials and workmanship and a twenty-five to thirty-year linear power performance warranty that guarantees the actual power output of our modules.

We warrant our battery storage products for a specific amount of time against performance or manufacturing defects. The warranty is typically for an initial term of 5 years from the date of installation, with an option for annual extensions for an additional 15 years. We have obtained warranties from our battery cell manufacturer suppliers to back up a portion of our warranties.

For solar and battery storage projects built by us, we provide a limited workmanship or balance of system warranty against defects in engineering, design, installation and construction under normal use, operation and service conditions generally for a period of two years following the energizing of the solar project. In resolving claims under the workmanship or balance of system warranty, we have the option of remedying through repair, refurbishment or replacement of equipment. We have also entered into similar workmanship warranties with our suppliers to back up our warranties.

As part of our energy business, before commissioning solar and battery storage projects, we conduct performance testing to confirm that the projects meet the operational and capacity expectations set forth in the agreements. In limited cases for solar power projects, we also provide for an energy generation performance test designed to demonstrate that the actual energy generation for up to the first three years meets or exceeds the modeled energy expectation (after adjusting for actual solar irradiation). In the event that the energy generation performance test performs below expectations, the appropriate party (EPC contractor or equipment provider) may incur liquidated damages capped at a percentage of the contract price. In certain instances, a bonus payment may be received if the energy generation performance test performs above expectations.

Our customer support and service function handles technical inquiries and warranty-related issues. In recent years, we expanded our capacity in these areas to better enable us to handle our customers' questions and concerns in a timely and professional manner.

We have agreements with a group of insurance companies to reduce some of the risks associated with our warranties. See "—Insurance" below. Our customer support and service function will continue to expand and improve services we provide to our customers.

Competition

CSI Solar Segment

The market for solar power and battery storage products is competitive and evolving. We compete with American companies, such as First Solar, and Asia-based companies such as Longi, Trina, Jinko, JA Solar and Hanwha Q Cells. We compete with battery storage companies, such as Sungrow and BYD. Some of our competitors are developing or producing products based on alternative solar technologies, such as thin film PV materials, that may ultimately have costs similar to, or lower than, our projected costs. Solar modules produced using thin film materials, such as cadmium telluride and copper indium gallium selenide technology, generally have lower conversion efficiency but do not use silicon for production, compared to our crystalline silicon solar module products, and as such are less susceptible to increases in the costs of silicon. Some of our competitors have also become vertically integrated, from upstream polysilicon manufacturing to solar system integration. In addition, the solar power market in general competes with other sources of renewable and alternative energy as well as conventional power generation.

We believe that the key competitive factors in the market for solar power and battery storage products include:

- price;
- the ability to deliver products to customers on time and in the required volumes;
- product quality and associated service issues;
- nameplate power or capacity and other performance parameters such as power tolerances;
- value-added services such as system design and installation;
- value added features such as those that make solar power and battery storage products easier or cheaper to install;
- additional system components such as mounting systems, delivered as a package or bundle;
- brand equity and any good reputation resulting from the above items, including the willingness of banks to finance projects using modules produced by a particular supplier;
- customer relationships and distribution channels; and
- the aesthetic appearance of solar power and battery storage products.

In the immediate future, we believe that our ability to compete depends on our ability to deliver cost-effective products in a timely manner and to develop and maintain a strong brand name based on high quality products and strong relationships with downstream customers. Our competitiveness also depends on our ability to effectively manage our cash flow and balance sheet and to maintain our relationships with the financial institutions that fund solar and battery storage projects. The solar industry is facing an accelerated market concentration by large companies. We believe that such industry concentration will benefit our Company in the long-term. We believe that the key to competing successfully in the long-term is to produce innovative, high quality products at competitive prices and develop an integrated sales approach that includes services, ancillary products, such as mounting systems and inverters, and value-added product features. Our goal is to offer our customers solar power and battery storage products that deliver the lowest LCOE or Levelized Cost of Storage ("LCOS"), and we focus in particular on high-priced markets and segments, such as the distributed generation market segment which includes commercial, industrial and residential end market applications. Additionally, we believe that a good marketing program and the strong relationships that we are building with customers and suppliers will support us in this competitive environment.

Global Energy Segment

Our energy business is a capital-intensive business with numerous industry participants. We face competition from a large and diverse group of local and international project developers, financial investors and certain utility companies. These competitors vary in terms of size, geographic focus, financial resources and operating capabilities. We compete in a diversified and complicated landscape since the commercial and regulatory environments for solar and battery storage project development, sale and operation vary significantly from region to region and country to country. While local policy frameworks on battery storage project development remain relatively new, many new entrants are seizing on the market opportunity.

Our primary competitors are local and international developers and operators of solar and battery storage projects. We believe the key competitive factors in the global solar and battery storage project development industry include:

- vertical integration with upstream manufacturing;
- permit and project development experience and expertise;
- reputation and track record;
- relationship with government authorities and knowledge of local policies;
- strong internal working capital and good relationship with banks and international organizations that enhance access to external financing;
- experienced technicians and executives who are familiar with the industry and the implementation of our business plans; and
- expertise and experience in managing construction and operations.

We cannot, however, 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.

Currently, we develop and construct and, in limited cases, operate and maintain solar and battery storage projects in various regions including the U.S., Canada, Japan, China, the EU, the U.K., Brazil, Mexico, Argentina, Chile, Colombia, Australia and Taiwan. We compete to supply energy to potential customers with a limited number of utilities and providers of distributed generation in these markets. If we wish to enter into new PPAs for our solar and battery storage projects upon termination of previous PPAs, we compete with conventional utilities primarily based on cost of capital, generation located at customer sites, operations and management expertise, price (including predictability of price), green attributes of power, the ease by which customers can switch to electricity generated by our energy systems and our open architecture approach to working within the industry, which facilitates collaboration and project acquisitions.

For further discussion of the competitive risks that we face, see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Because the markets in which we compete are highly competitive and evolving quickly, because many of our competitors have greater resources than we do or are more adaptive, and because we have a limited track record in our energy business, we may not be able to compete successfully and we may not be able to maintain or increase our market share.”

Insurance

We maintain property risk insurance policies with reputable insurance companies to cover our equipment, facilities, buildings and inventories. The coverage of these insurance policies includes losses due to natural hazards and losses arising from unforeseen accidents. Our manufacturing plants in China and elsewhere are covered by business interruption insurance. However, significant damage or interruption to any of our manufacturing plants, whether as a result of fire or other causes, could still have a material and adverse effect on our results of operations. We also maintain commercial general liability (including product liability) coverage. We obtained credit insurance primarily from China Export & Credit Insurance Corporation (“Sinasure”) and PICC Property and Casualty Company Limited (“PICC”). Credit insurance is designed to offset the collection risk of our account receivables for certain customers within the credit limits approved by the insurers. Risks related to marine and air for the export of our materials and products are covered under cargo transportation insurance. We also maintain directors and officers’ liability insurance.

We have entered into agreements with a group of insurance companies with high credit ratings to back up a portion of our warranties on solar module products. The insurance companies are obliged to reimburse us, subject to certain maximum claim limits and certain deductibles, for the actual product warranty costs that we incur under the terms of our solar module product warranty policy. We believe that our warranty insurance improves the marketability of our products and our customers are willing to pay more for products with warranties backed by insurance.

Environmental Matters

Except as disclosed in the “Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China,” we believe we have obtained the environmental permits and passed relevant assessments necessary to conduct the business currently carried on by us at our existing manufacturing facilities. We have also conducted environmental studies in conjunction with our solar and battery storage projects to assess and reduce the environmental impact of such projects. Our major manufacturing operations are certified under ISO14001 Environmental and ISO45001 Occupational Health and Safety standards, which required that we implement and operate according to various procedures that demonstrate waste reduction, energy conservation, injury reduction and other environmental, safety and health objectives.

We have finished establishing our internal ISO14064:2018 Green House Gas (“GHG”) quantification and reporting system under guidance of 3rd party Société Générale de Surveillance (SGS), to identify, quantify and report our GHG emissions and removals at the organization level, setting up solid ground for continuous GHG emissions reduction.

Our products must comply with the environmental regulations of the jurisdictions in which they are installed. We make efforts to ensure that our products comply with the EU Regulation (“EC”) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (“REACH”). Our system solutions product lines, including string inverters, also comply with the European Union’s RoHS (Restriction of Hazardous Substances) Directive 2011/65/EU and its amendments. Note that Solar PV modules are exempted from the European Restriction of Hazardous Substances (“RoHS”) legislation as part of the decision from the European Commission to ensure achievement of energy renewable targets in its article 2. We also strictly adhere to Toxicity Characteristic Leaching Procedure (“TCLP”) testing of our photovoltaic module portfolio to monitor the presence of any toxic metal substances (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver) according to TCLP Standard EPA Test Method 1311, as issued by the U.S. Environmental Protection Agency (“EPA”) under the Toxic Substances Control Act (“TSCA”) for landfill disposal of modules. We adopted a new advanced TCLP sampling method developed by Arizona State University to improve sampling accuracy and testing results.

Our manufacturing operations are subject to regulation and periodic monitoring by local environmental protection authorities. Also, various licenses, permits, and approvals are required for our solar and battery storage project developments within our energy business. If we fail to comply with present or future environmental laws and regulations, we could be subject to fines, suspension of production or cessation of operations.

We are committed to achieving the goal of powering our global operations renewable energy in this decade. To achieve this goal, we will reduce our electricity and energy consumption while increasing the use of renewable energy. These initiatives may be subject to policy, market or cost barriers in the locations where we operate. We will also reduce our energy intensity by leveraging our expertise and strength in product technologies, manufacturing process know-how, and energy savings while we continue to grow our business.

Furthermore, as one of the world’s largest solar and energy storage project developers, we are committed to proactively minimizing any adverse environmental and ecological impact that our project development activities may have, while we develop projects and monitor progress and results. Early in the project development process, we integrate the evaluation of environmental and ecological impacts, as well as community engagement into our internal approval process for each solar and battery storage project we develop. These efforts have helped us to minimize project delays related to environmental and ecological impacts or community engagement, as these factors were already considered during the project planning phase.

We evaluate and provide disclosures on our climate-related risks and opportunities in accordance with the TCFD, 100% of our revenues are generated from the sale of products and services related to clean renewable energy, which is crucial to achieving the global decarbonization goals established in the Paris Agreement. To manage the environmental impacts of our manufacturing activities, we have established an Environmental Management System to measure these impacts and set up 5-year rolling targets on environmental metrics to reduce the impacts.

Environmental, Social and Governance Initiatives

We incorporate ESG factors across our business and strategic decision-making process and continue to make efforts to improve our practices to ensure long-term sustainability. Our three key focus areas are:

- **Environmental.** We are committed to providing a safe and enriching work environment for employees and contractors and strive to reduce the environmental impact of our business activities. We track greenhouse gas emissions and manufacturing intensity on energy, water and waste across our facilities. As a result, we have meaningfully reduced greenhouse gas emissions and energy, water and waste intensity during the manufacturing of solar PV modules. In addition, we research, develop and implement new technologies to enhance product efficiency and reduce the environmental impact of our production processes. We have also established rolling 5-year key performance indicator (“KPI”) targets for key metrics that are integrated into employee KPIs and compensation plans. Moreover, we have established a sustainability program to manage the sustainability risks associated with the growth opportunities, which is overseen by the Sustainability Committee.
- **Social Responsibility.** We are an equal opportunities employer, and we strive to cultivate a diverse and inclusive culture and create lasting positive impact on society and the communities in which we operate. To promote diversity and inclusion, we monitor diversity and inclusion performance across all our human capital management areas by tracking our hiring practices including improving the balance of women, people of ethnic minority and people with disabilities in our hiring, expanding our recruiting channels to attract a more diverse range of candidates, establishing several employee resource groups to provide institutional for reaching professional career goals, and providing unconscious bias training across our global operations. We care about our employees’ training and development and have implemented extensive skills and leadership training programs, including our Canadian Solar education courses and programs, which aims to help our employees gain a broader understanding of our business, driver innovation, and stimulate more effective collaboration. Our Canadian Solar education courses and programs also help further develop our Global Energy employees’ expertise across disciplines and provide these employees with learning resources covering its key business functions. In 2022, we have designed and launched 40 courses on key workstreams, such as project development, permitting, asset management, financing, sales management, order management and operations, supply chain management, marketing, technical services and support. See “Item 6. Directors, Senior Management and Employees—D. Employees.” We also respect and recognize employees’ rights and freedom to associate and bargain collectively. With employee safety being our top priority, we have implemented the ISO45001 occupational health and safety management system environmental management system (“ISO14001”), to ensure that hazards in the workplace are systematically identified and evaluated and that relevant control measures are put in place. Our rigorous safety policies and procedures have helped us maintain a low rate of safety-related incidents. In addition, we strive to be a responsible corporate citizen in the communities where we operate by responding quickly to COVID-19 and developing a response plan to provide guidance to all offices internationally, and abiding to a strict code of business conduct and ethics and expecting no less from our business partners, including our suppliers. We also cultivate long-term relationships with local organizations to ensure we are able to fully integrate solar and battery storage projects into existing energy infrastructure and surrounding communities.
- **Corporate Governance.** Our board of directors is responsible for managing and supervising the business and affairs of our Company, and has a broad range of skills and industry knowledge to oversee management performance to ensure the success of our business and create long-term value for stakeholders. We continuously make efforts to improve the diversity of our board of directors and strive to further improving diversity at the board level and meet the NASDAQ New Rule 5605(f) for Diverse Board Representation in the specified time frame, including based on gender, nationality, ethnicity, age and expertise. Moreover, we are committed to upholding the highest standards of business ethics by establishing a framework of governance documents and guidelines, and conducting business ethics awareness and compliance training for our employees on a regular basis. Furthermore, we promote equity, diversity and inclusion, as we believe a diverse workforce will enrich the human capital of our organization. By implementing best practices locally across our business operations from manufacturing to sales and project development, we are committed to ensuring that all employees and persons related to our business are treated fairly, respectfully, and with dignity.

In addition, we aim to establish a sustainable, efficient and healthy supply chain that meets our needs and the interests of our stakeholders. We maintain a procurement management strategy which follows a centralized procurement approach, controlled at the group level and supported by each division. We also require all our suppliers to adhere to our Supplier Code of Conduct, which sets forth our standards on human rights, environmental protection, health, safety and business ethics.

We are committed to achieving the goal of powering our global operations with renewable energy in this decade. To achieve this goal, we will reduce our electricity and energy consumption while increasing the use of renewable energy. These initiatives may be subject to policy, market or cost barriers in the locations where we operate. We will also reduce our energy intensity by leveraging our expertise and strength in product technologies, manufacturing process know-how, and energy savings while we continue to grow our business.

Furthermore, as one of the world's largest solar power and energy storage project developers. We are committed to proactively minimizing any adverse environmental and ecological impact that our project development activities may have, while we develop projects and monitor progress and results. Early in the project development process, we integrate the evaluation of environmental and ecological impacts, as well as community engagement into our internal approval process for each solar and battery storage project we develop. These efforts have helped us minimize project delays related to environmental and ecological impacts or community engagement, as these factors were already considered during the project planning phase.

We evaluate and provide disclosures on our climate-related risks and opportunities in accordance with the TCFD, 100% of our revenues are derived from clean, renewable energy, which is crucial to achieving the global decarbonization goals established in the Paris Agreement. To manage the environmental impacts of our manufacturing activities, we have established an Environmental Management System to measure these impacts and set up 5-year rolling targets on environmental metrics to reduce the impacts.

Environmental, Social Responsibility and Corporate Governance Policies

We have adopted a suite of environmental, social responsibility and corporate governance policies to provide a framework for our sustainability commitments, which are publicly available on our website. Our Environment, Occupational Health and Safety Policy provides for the principles and guidelines for the protection of the environment, and the health and safety of our employees and others who are affected by our business. To better fulfill our social responsibilities, we also maintain our Labor and Human Rights Policy, Equal Employment Opportunity Policy, Anti-Modern Slavery Policy, Supplier Code of Conduct, and Conflict Minerals Policy. In addition, to maintain the highest standards of conduct and ethics in the way that we conduct our business, we have introduced the following corporate governance policies: Code of Business Conduct and Ethics, Whistleblower Policy, Insider Trading Policy, Related-Party Transactions, Prohibition Against Giving Bribes, and Prohibition Against Accepting Bribes.

Government Regulations

This section sets forth a summary of certain significant regulations or requirements that affect our business activities in China or our shareholders' right to receive dividends and other distributions from us.

Renewable Energy Law and Other Government Directives

In February 2005, China enacted its Renewable Energy Law, which became effective on January 1, 2006 and was revised in December 2009. The revised Renewable Energy Law, which became effective on April 1, 2010, sets forth policies to encourage the development and use of solar energy and other non-fossil energy sources and their on-grid generation. It also authorizes the relevant pricing authorities to set favorable prices for the purchase of electricity generated by solar and other renewable power generation systems.

The law also sets forth the national policy to encourage the installation and use of solar energy water-heating systems, solar energy heating and cooling systems, solar PV systems and other solar energy utilization systems. It also provides financial incentives, such as national funding, preferential loans and tax preferences for the development of renewable energy projects subject to certain regulations of the relevant authorities.

In November 2005, the NDRC promulgated the Renewable Energy Industry Development Guidance Catalogue, in which solar power figured prominently. In January 2006, the NDRC promulgated two implementation directives with respect to the Renewable Energy Law. In January 2007, the NDRC promulgated another related implementation directive. These directives set forth specific measures for setting the price of electricity generated by solar and other renewable power generation systems, for sharing additional expenses, and for allocating administrative and supervisory authority among different government agencies at the national and provincial levels. They also stipulate the responsibilities of electricity grid companies and power generation companies with respect to the implementation of the Renewable Energy Law.

In August 2007, the NDRC promulgated the Medium and Long-Term Development Plan for the Renewable Energy Industry. This plan sets forth national policy to provide financial allowance and preferential tax regulations for the renewable energy industry. The Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the PRC, which was approved by the National People's Congress in March 2016, the Thirteenth Five-Year Plan for Renewable Energy Development, which was promulgated by the NDRC in December 2016, and the Thirteenth Five-Year Plan for Solar Power Generation, which was promulgated by the National Energy Administration in December 2016 also demonstrates a commitment to promote the development of renewable energy to enhance the competitiveness of the renewable energy industry, including the solar energy industry. In December 2021, the State Council promulgated the Fourteenth Five-Year Plan Comprehensive Work Plan for Energy Conservation and Emission Reduction, which encourages the application of wind, solar, biomass and other renewable energy in agricultural production and rural life and promotes the integrated construction of building photovoltaics.

China's Ministry of Housing and Urban-Rural Development (formerly, the Ministry of Construction) also issued a directive in June 2005 which seeks to expand the use of solar energy in residential and commercial buildings and encourages the increased application of solar energy in different townships. In November 2005, China's Ministry of Housing and Urban-Rural Development promulgated the Administrative Provisions on Energy Conservation for Civil Constructions which encourages the development of solar energy. In August 2006, the State Council issued the Decision on Strengthening the Work of Energy Conservation which encourages the development of solar energy and other renewable energy. In addition, on April 1, 2008, the newly revised PRC Energy Conservation Law came into effect. Among other objectives, this law encourages the installation of solar power facilities in buildings to improve energy efficiency. In July 2009, China's Ministry of Finance and Ministry of Housing and Urban-Rural Development jointly promulgated "the Urban Demonstration Implementation Program of the Renewable Energy Building Construction" and "the Implementation Program of Acceleration in Rural Application of the Renewable Energy Building Construction" to support the development of the new energy industry and the new energy-saving industry.

On March 8, 2011, China's Ministry of Finance and Ministry of Housing and Urban-Rural Development jointly promulgated the Notice on Further Application of Renewable Energy in Building Construction, which aims to raise the percentage of renewable energy used in buildings.

On August 21, 2012, China's Ministry of Finance and Ministry of Housing and Urban-Rural Development jointly promulgated the Notice on Improving Policies for Application of Renewal Energy in Building and Adjusting Fund Allocation and Management Method, which aims to promote the use of solar energy and other new energy products in public facilities and residences, further amplifying the effect of the policies for application of renewable energy in buildings.

In June 2014, the General Office of the State Council issued its Notice on Printing and Distributing the Action Plan for the Energy Development Strategy (2014-2020), which requested accelerating the development of solar power generation, including promoting the construction of photovoltaic base construction, among others.

In April 2016, the NDRC and National Energy Administration issued the Notice on Printing and Distributing the Action Plan for Energy Technology Revolution and Innovation (2016-2030), which sets forth the focus, the main direction, the timetable and the route of energy technology innovation.

In November 2017, the NDRC issued the Opinions on Comprehensively Deepening the Reform of the Price Mechanism, which requested improving the price mechanism of renewable energy, including adopting the decrement mechanism on the on-grid benchmark price of new energy resources such as wind power and photovoltaic power.

In March 2021, National People's Congress approved the Outline of the Fourteenth Five-Year Plan for National Economic and Social Development and the Long-term Goals for 2035 of the PRC, in which renewable energy industry was supported.

In January 2022, the National Development and Reform Commission ("NDRC") and the National Energy Administration ("NEA") issued the Fourteenth Five-Year Plan for a Modern Energy System, which emphasizes climate commitment, energy security and energy transition, reflected by the released targets on the primary energy mix, flexible power sources, the electrification rate, and new technologies. In addition, power reforms will focus on the market and pricing mechanisms to enable the growth and integration of renewables on an enlarged scope.

In May 2022, the Implementation Plan for Promoting the High-Quality Development of New Energy in the New Era of the NDRC and the NEA was formulated by the State Council. The plan promotes step up efforts aimed at accelerating the construction of a clean, low-carbon, safe and highly efficient energy system. The plan promotes the construction of large-scale photovoltaic bases in certain areas, the integration of new energy development and utilization with rural revitalization, the application of new energy in industrial enterprises and industrial parks, and construction of household photovoltaic, among others.

In June 2022, nine government departments including the NDRC, the NEA and the MOF jointly issued the Fourteenth Five-Year Plan for Renewable Energy Development, which proposed that during the Fourteenth Five-Year Plan period, in appropriate areas, photovoltaic power generation base development will be implemented, and distributed photovoltaic development will be comprehensively promoted.

In September 2022, the NDRC and the Comprehensive Department of the NEA issued the Notice on Matters related to Promoting the Healthy Development of the photovoltaic industry Chain, to encourage the photovoltaic manufacturing to increase the consumption of green electricity. Polysilicon production enterprises are encouraged to directly consume green electricity from photovoltaic for production and manufacturing.

Environmental Regulations

As we have expanded our ingot, silicon wafer and solar cell manufacturing capacities, we have begun to generate material levels of noise, wastewater, air emissions and other industrial waste. Additionally, as we expand our internal solar components production capacity, our risk of facility incidents that would negatively affect the environment also increases. We are subject to a variety of governmental regulations related to the storage, use and disposal of hazardous materials. The major environmental laws and regulations applicable to us include the PRC Environmental Protection Law, which became effective in 1989, as amended and promulgated in 2014, the PRC Law on the Prevention and Control of Noise Pollution, which became effective in 1997, as amended and promulgated in 2018, the PRC Law on the Prevention and Control of Air Pollution, which became effective in 1988, as amended and promulgated in 1995, 2000, 2015 and 2018, the PRC Law on the Prevention and Control of Water Pollution, which became effective in 1984, as amended and promulgated in 1996, 2008 and 2017, the PRC Law on the Prevention and Control of Solid Waste Pollution, which became effective in 1996, as amended and promulgated in 2004, 2013, 2015, 2016 and 2020, the PRC Law on Evaluation of Environmental Affects, which became effective in 2003, as amended and promulgated in 2016 and 2018, the PRC Law on Promotion of Clean Production, which became effective in 2003, as amended and promulgated in 2012, and the Regulations on the Administration of Construction Project Environmental Protection, which became effective in 1998, as amended and promulgated in 2017.

Some of our PRC subsidiaries are located in Suzhou, China, which is adjacent to Taihu Lake, a nationally renowned and protected body of water. As a result, production at these subsidiaries is subject to the Regulations on the Administration of Taihu Basin, which became effective on 2011, the Regulation of Jiangsu Province on Preventing Water Pollution in Taihu Lake, which became effective in 1996 and was further revised and promulgated in 2007, 2010, 2012, 2018 and 2021, and the Implementation Plan of Jiangsu Province on Comprehensive Treatment of Water Environment in Taihu Lake Basin, which was promulgated in February 2009 and amended in 2013. Because of these regulations, the environmental protection requirements imposed on nearby manufacturing projects, especially new projects, have increased noticeably, and Jiangsu Province has stopped approving construction of new manufacturing projects that increase the amount of nitrogen and phosphorus released into Taihu Lake, except for those satisfy certain applicable statutory requirements.

Admission of Foreign Investment

The principal regulation governing foreign ownership of solar power businesses in the PRC is the Catalogue of Encouraged Industries for Foreign Investment. Under the current catalogue, which was amended in October 2022 and became effective on January 1, 2023, the solar power related business is classified as an “Encouraged Industries for Foreign Investment.” Companies that operate in encouraged foreign investment industries and satisfy applicable statutory requirements are eligible for preferential treatment, including exemption from customs of certain self-used equipment and priority consideration in obtaining land use rights provided by certain local governments.

While the 2004 catalogue only applied to the construction and operation of solar power stations, the 2007 catalogue expanded its application also applies to the production of solar cell manufacturing machines, the production of solar powered air conditioning, heating and drying systems and the manufacture of solar cells, and the 2011 catalogue, the 2015 catalogue and the 2017 catalogue, the 2019 catalogue, the 2020 catalogue and the current 2022 catalogue also cover production of power generation glass for thin film batteries, glass for solar illuminators, and photovoltaic power generation glass used in construction, manufacturing of complete sets of equipment or key equipment for new energy power generation: equipment for photovoltaic power generation, and recycling of decommissioned waste photovoltaic modules.

Administration of Foreign Invested Companies

The establishment, approval, registered capital requirement and day-to-day operational matters of wholly foreign-owned enterprises, are regulated by the Wholly Foreign-Owned Enterprise Law of the PRC, effective in 1986 and amended in 2000 and 2016, and the Implementation Rules of the Wholly Foreign-owned Enterprise Law of the PRC, effective in 1990 and amended in 2001 and 2014. The establishment, operation and management of corporate entities in China are governed by the Company Law of the PRC, or the Company Law, effective in 1994 and amended in 1999, 2004, 2005, 2013 and 2018. The Company Law is applicable to our PRC subsidiaries unless PRC laws on foreign investment stipulate otherwise.

In March 2019, the Foreign Investment Law was promulgated, effective on January 1, 2020, at which time the Wholly Foreign-owned Enterprise Law will be repealed. Regulation for Implementing the Foreign Investment Law of the People’s Republic of China took effect on January 1, 2020. Foreign- invested enterprises that were established in accordance with Wholly Foreign-owned Enterprise Law before the implementation of Foreign Investment Law may retain their original organizational forms and other aspects for five years.

Income Tax and VAT

PRC enterprise income tax is calculated based on taxable income determined under PRC accounting principles. Under the EIT Law, both foreign-invested enterprises and domestic enterprises are subject to a uniform enterprise income tax rate of 25%. The EIT Law provides for preferential tax treatment for certain categories of industries and projects that are strongly supported and encouraged by the state. For example, enterprises qualified as HNTEs are entitled to a 15% enterprise income tax rate, provided that they satisfy other applicable statutory requirements. Further, enterprises which engage in businesses within the scope of the Catalogue of Encouraged Industries in Western Regions promulgated by the NDRC, or Western Catalogue, are entitled to a 15% enterprise income tax rate provided that such enterprises satisfy other applicable statutory requirements.

Certain of our PRC subsidiaries, such as CSI New Energy Holding Co., Ltd., or CSI New Energy Holding, Canadian Solar Manufacturing (Luoyang) Inc., or CSI Luoyang Manufacturing, were once HNTEs and enjoyed preferential enterprise income tax rates. These benefits have, however, expired. In 2022, only Suzhou Sanysolar Materials Technology Co., Ltd, Changshu Tegu New Material Technology Co., Ltd, CSI New Energy Development (Suzhou) Co., Ltd (formerly known as Suzhou Gaochuangte New Energy Development Co., Ltd), Canadian Solar Photovoltaic Technology (Luoyang) Co., Ltd. and Changshu Tian Co., Ltd were HNTEs and enjoyed preferential enterprise income tax rates.

The EIT Law also provides that enterprises established outside China whose “de facto management body” is located in China are considered PRC tax residents and will generally be subject to the uniform 25% enterprise income tax rate on their global income. Under the implementation regulations, the term “de facto management body” is defined as substantial and overall management and control over aspects such as the production and business, personnel, accounts and properties of an enterprise. Circular 82 further provides certain specific criteria for determining whether the “de facto management body” of a PRC-controlled offshore incorporated enterprise is located in the PRC. The criteria include whether (a) the premises where the senior management and the senior management bodies responsible for the routine production and business management of the enterprise perform their functions are mainly located within the PRC, (b) decisions relating to the enterprise’s financial and human resource matters are made or subject to approval by organizations or personnel in the PRC, (c) the enterprise’s primary assets, accounting books and records, company seals, and board and shareholders’ meeting minutes are located or maintained in the PRC and (d) 50% or more of voting board members or senior executives of the enterprise habitually reside in the PRC. Although Circular 82 only applies to offshore enterprises controlled by enterprises or enterprise groups located within the PRC, the determining criteria set forth in the Circular 82 may reflect the tax authorities’ general position on how the “de facto management body” test may be applied in determining the tax resident status of offshore enterprises. As the tax resident status of an enterprise is subject to the determination by the PRC tax authorities, uncertainties remain with respect to the interpretation of the term “de facto management body” as applicable to our offshore entities.

Under the EIT Law and implementing regulations issued by the State Council, the PRC withholding tax rate of 10% is generally applicable to interest and dividends payable to investors from companies that are not “resident enterprises” in the PRC, to the extent such interest or dividends have their sources within the PRC. If our Canadian parent entity is deemed a PRC tax resident under the EIT Law based on the location of our “de facto management body,” dividends distributed from our PRC subsidiaries to our Canadian parent entity could be exempt from Chinese dividend withholding tax. However, in that case, dividends from us to our shareholders may be regarded as China-sourced income and, consequently, be subject to Chinese withholding tax at the rate of 10%, or at a lower treaty rate if applicable. Similarly, if we are considered a PRC tax resident, any gain realized by our shareholders from the transfer of our common shares is also subject to Chinese withholding tax at the rate of 10% if such gain is regarded as income derived from sources within the PRC. It is unclear whether any dividends that we pay on our common shares or any gains that our shareholders may realize from the transfer of our common shares would be treated as income derived from sources within the PRC and subject to PRC tax.

Under the Provisional Regulation of the PRC on Value Added Tax amended in 2008, 2016 and 2017 and its implementation rules, which became effective in 2009 and were amended in 2011, all entities and individuals that are engaged in the sale of goods, processing, repairs and replacement services, the sales of services, intangible assets or real estate, and the importation of goods in China are required to pay VAT. Gross proceeds from sales and importation of goods and sales of labor services are generally subject to VAT at a rate of 17%, with exceptions for certain categories of goods that are taxed at a rate of 11%. Gross proceeds from sales of real estate are subject to VAT at a rate of 11%. Gross proceeds from sales of services and intangible assets are generally subject to VAT at a rate of 6%, with exceptions for certain categories of services or intangible assets that are taxed at a rate of 17% or 11%. When engaging in exportation of certain goods or cross-border sales of certain services or intangible assets, the exporter or the seller is entitled to a refund of a portion or all of the VAT that it has already paid or borne.

In April 2018, Ministry of Finance and State Administration of Taxation jointly announced that as of May 1, 2018, if the VAT taxpayer is subject to VAT taxable sales or imported goods, the original 17% tax rate or the original 11% tax rate shall be adjusted to 16% or 10%, respectively.

In March 2019, Ministry of Finance, State Administration of Taxation and General Administration of Customs jointly announced that as of April 1, 2019, if the VAT general taxpayer is subject to VAT taxable sales or imported goods, the original 16% tax rate shall be adjusted to 13%; if the original 10% tax rate is applied, the tax rate shall be adjusted to 9%.

Foreign Currency Exchange

Foreign currency exchange regulation in China is primarily governed by the Foreign Currency Administration Rules, which became effective in 1996 and were amended in 1997 and 2008, and the Settlement, Sale and Payment of Foreign Exchange Administration Rules (1996), or the Settlement Rules.

Currently, the Renminbi is convertible for current account items, including the distribution of dividends, interest payments, trade and service-related foreign exchange transactions. Conversion of the Renminbi for most capital account items, such as security investment and repatriation of investment, however, is still subject to limitation and requires the approval by or registration with SAFE.

However, SAFE began to reform the foreign exchange administration system and issued the Notice on Reforming the Administrative Approach Regarding the Settlement of the Foreign Exchange Capitals of Foreign-invested Enterprises, or Circular 19, on March 30, 2015, which allows foreign invested enterprises to settle their foreign exchange capital on a discretionary basis according to the actual needs of their business operation and allows a foreign-invested enterprise with a business scope including “investment” to use the RMB capital converted from foreign currency registered capital for equity investments within the PRC. On June 9, 2016, SAFE issued the Circular on Reforming and Regulating Policies on the Control over Foreign Exchange Settlement of Capital Accounts, or Circular 16. Compared to Circular 19, Circular 16 provides that discretionary foreign exchange settlement applies to foreign exchange capital, foreign debt offering proceeds and remitted foreign listing proceeds, and the corresponding RMB obtained from foreign exchange settlement are not restricted from extending loans to related parties or repaying the inter-company loans (including advances by third parties).

On February 13, 2015, SAFE promulgated the Circular on Further Simplifying and Improving the Policies Concerning Foreign Exchange Control on Direct Investment, or SAFE Circular No. 13, which delegates the authority to enforce the foreign exchange registration in connection with the inbound and outbound direct investment under relevant SAFE rules to certain banks and therefore further simplifies the foreign exchange registration procedures for inbound and outbound direct investment.

On January 18, 2017, SAFE promulgated the Circular on Further Improving Reform of Foreign Exchange Administration and Optimizing Genuineness and Compliance Verification, which sets out various measures that relaxes the policy restriction on foreign exchange inflow to further enhance trade and investment facilitation and that tightens genuineness and compliance verification of cross-border transactions and cross-border capital flow.

Dividend Distribution

The principal regulations governing distribution of dividends paid by Foreign Investment Law and its implementation rules both became effective in 2020. The Company Law became effective in 1994 and was amended in 1999, 2004, 2005, 2013 and 2018. The EIT Law became effective in 2008 and was amended in 2017, 2018, and the implementation rules of EIT Law became effective in 2008 and was amended in 2019.

Under these laws, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with PRC accounting standards and regulations. In addition, a wholly foreign invested enterprise in China is required to set aside at least 10% of its after-tax profits determined in accordance with PRC accounting standards each year to its general reserves until the accumulative amount of such reserves reach 50% of its registered capital. These reserves are not distributable as cash dividends.

Employment

There are multiple laws and regulations governing the employment relationship, including wage and hour requirements, working and safety conditions, social insurance, housing funds and other welfare. The PRC Labor Law which became effective in 1995 and amended in 2009 and 2018, the Labor Contract Law of the People's Republic of China, which became effective in 2008, and was later revised in 2012, its Implementing Regulation and the amendment thereunder, which became effective in 2008 and 2013, respectively, permit workers in both state-owned and private enterprises in the PRC to bargain collectively. The PRC Labor Law and the PRC Labor Contract Law provide for collective contracts to be developed through collaboration between the labor unions (or worker representatives in the absence of a union) and management that specify such matters as working conditions, wage scales, and hours of work. The PRC Labor Contract Law and its Implementing Regulation impose certain requirements with respect to human resources management, including, among other things, signing labor contracts with employees, terminating labor contracts, paying remuneration and compensation and making social insurance contributions. In addition, the PRC Labor Contract Law requires employers to provide remuneration packages that meet the relevant local minimum standards. The PRC Labor Contract Law has enhanced rights for the nation's workers, including permitting open-ended labor contracts and severance payments. It requires employers to provide written contracts to their workers, restricts the use of temporary labor and makes it harder for employers to lay off employees. It also requires that employees with fixed-term contracts be entitled to an indefinite-term contract after a fixed-term contract is renewed twice or the employee has worked for the employer for a consecutive ten-year period. According to the Interim Provisions on Labor Dispatching, which came into effect in 2014, the number of dispatched workers used by an employer shall not exceed 10% of its total number of workers.

Under applicable PRC laws, rules and regulations, including the Social Insurance Law promulgated by the Standing Committee of the National People's Congress and effective in 2011 and amended in 2018, the Rules on Implementing the Social Insurance Law issued by Ministry of Human Resource and Social Security and effective in 2011, the Interim Regulations on the Collection and Payment of Social Security Funds promulgated by the State Council and effective as of 1999, as amended in 2019, the Interim Measures Concerning Maternity Insurance promulgated by the Ministry of Labor and effective in 1995, the Regulations on Occupational Injury Insurance promulgated by the State Council and effective in 2004 and amended in 2010, and the Regulations on the Administration of Housing Accumulation Funds promulgated by the State Council and effective in 1999, as amended in 2019, employers are required to contribute, on behalf of their employees, to a number of social security funds, including funds for basic pension insurance, unemployment insurance, basic medical insurance, occupational injury insurance, maternity leave insurance, and to housing accumulation funds. These payments are made to local administrative authorities and any employer who fails to contribute may be fined and ordered to remediate on payments within a stipulated time period.

Enforceability of Civil Liabilities

Canadian Solar Inc. is a corporation governed by the laws of the province of Ontario, Canada with operations in North America, South America, Europe, South Africa, the Middle East, Australia and Asia through our operating subsidiaries in which we have equity ownership. Through the equity ownership in our subsidiaries, we primarily conduct our manufacturing operations in China and Southeast Asia, and have made certain investments in solar power system and project assets in China.

A majority of our directors and officers are nationals and residents of countries other than the United States (principally Canada, mainland China and Hong Kong) and a substantial portion of the assets of these persons are located outside the United States. As a result, it may not be possible for you to effect service of process within the United States upon those persons. Furthermore, it may not be possible for you to enforce against us or them, in the United States, judgments obtained in U.S. courts, because all or a substantial portion of our assets and the assets of those persons are located outside the United States. In addition, our constituent documents do not contain provisions requiring that disputes, including those arising under the securities laws of the United States, between us, our officers, directors and shareholders, be arbitrated. As a result, it may be difficult for a shareholder to effect service of process within the United States upon us or such persons, or to enforce against us or them judgments obtained in United States courts, including judgments predicated upon the civil liability provisions of the securities laws of the United States or any state in the United States.

There are defenses that can be raised to the enforceability, in original actions in Canadian courts, of liabilities based upon the U.S. federal securities laws and to the enforceability in Canadian courts of judgments of U.S. courts obtained in actions based upon the civil liability provisions of U.S. federal securities laws, such that the enforcement in Canada of such liabilities and judgments is not certain. Therefore, it may not be possible to enforce in Canada those actions against us, our directors and officers.

There is uncertainty as to whether the courts of the PRC would:

- recognize or enforce judgments of United States courts obtained against us or our directors or officers predicated upon the civil liability provisions of the securities laws of the United States or any state in the United States, or

- entertain original actions brought in each respective jurisdiction against us or our directors or officers predicated upon the securities laws of the United States or any state in the United States.

The recognition and enforcement of foreign civil judgments are provided for under the PRC Civil Procedures Law. PRC courts may recognize and enforce foreign civil judgments in accordance with the requirements of the PRC Civil Procedures Law based either on treaties or arrangements between the PRC and the country where the judgment is made or on reciprocity between jurisdictions, among others. Currently, China does not have any treaties or other arrangements that provide for the reciprocal recognition and enforcement of foreign civil judgments with the United States or Canada. As a result, it is generally difficult to recognize and enforce in China a civil judgment rendered by a court in either of these two jurisdictions.

In addition to the aforesaid substantial uncertainties, the foreign shareholders seeking the enforcement of a foreign judgment in the PRC courts could incur substantial legal and other costs that may be material to the shareholders. Shareholders could potentially spend a considerable amount of time and other resources to go through the recognition and enforcement procedure, which may be a significant burden for the shareholders, but with no assurance of ultimate success.

C Organizational Structure

The following table sets out our significant subsidiaries, including their place of incorporation and our ownership interest:

<u>Name of entity</u>	<u>Place of incorporation</u>	<u>Ownership interest</u>
Canadian Solar Solutions Inc.	Canada	100 %
Recurrent Energy Group Inc.	USA	100 %
Canadian Solar New Energy Holding Company Limited	Hong Kong	100 %
CSI Solar Co., Ltd.	PRC	79.59 %
CSI Cells Co., Ltd.	PRC	100 %*
Canadian Solar Manufacturing (Luoyang) Inc.	PRC	100 %*
Canadian Solar Sunenergy (Baotou) Co., Ltd.	PRC	100 %*
CSI Solar Technology (Xining) Co., Ltd.	PRC	100 %*
Canadian Solar Manufacturing (Changshu) Inc.	PRC	100 %*
Canadian Solar (USA) Inc.	USA	100 %*
Canadian Solar International Limited	Hong Kong	100 %*
Canadian Solar Manufacturing (Thailand) Co., Ltd.	Thailand	99.999996 %*

* Significant subsidiaries (as defined in Rule 1-02(w) of Regulation S-X) within the scope of CSI Solar were held through CSI Solar Co., Ltd. in which CSI held a 79.59% ownership interest. Such ownership interest percentage may differ when calculated on different bases of accounting, e.g. PRC GAAP.

D Property, Plants and Equipment

The following is a summary of our material properties, including information on our manufacturing facilities and office buildings as of the date of this annual report on Form 20-F:

- Canadian Solar Sunenergy (Baotou) Co., Ltd. has obtained the land use right of a piece of land in Baotou of Inner Mongolia of approximately 225,000 square meters, on which we have built ingots manufacturing facilities with a floor area of approximately 18,000 square meters. The production of ingots manufacturing commenced in May 2017. We have also started the construction of other facilities producing mono ingots with a floor area of approximately 97,000 square meters on the same land.
- CSI Solar Technology (Xining) Co., Ltd. has obtained a land use right of a piece of land in Xining, Qinghai province of approximately 200,000 square meters in May 2021. We have obtained land use right certificate in July 2021. We plan to build approximately 185,000 square meters (Phase I and Phase II) of ingots manufacturing facility on such land. We are building Phase I manufacturing facility of approximately 107,000 square meters at present, expect to obtain property ownership certificate of Phase I before June 2023.
- CSI Luoyang Manufacturing has a land use right of a piece of land of approximately 35,000 square meters in Luoyang, Henan province (Phase I), on which we have built wafer manufacturing facilities of approximately 6,761 square meters. The certificates for property ownership were granted in June 2008. In the same year of 2008, CSI Luoyang Manufacturing obtained the land use right to an adjacent piece of land of approximately 80,000 square meters (Phase II), on which we have built manufacturing facilities of approximately 30,000 square meters. The floor area of Phase II is approximately 30,000 square meters. The certificates for property ownership were granted in September 2013. Subsequently in 2016, CSI Luoyang Manufacturing obtained the land use right to another piece of land of approximately 160,000 square meters (Phase III), on which we have constructed

manufacturing facilities with the floor area of approximately 39,000 square meters. We obtained the certificates for property ownership of Phase III in March 2018.

- CSI Wafer (FuNing) Co., Ltd. which was founded in November, 2017, has leased 3 wafer manufacturing facilities in Funing Development Zone, Jiangsu Province with a floor area of approximately 24,000 square meters in total for four years since April 2021. Such leased facilities have completed equipment installation and started production in June 2021.
- CSI Solar Manufacturing (Funing) Co., Ltd. has leased cell manufacturing facilities of approximately 27,000 square meters on a piece of land of approximately 67,000 square meters (Phase I) in Funing, Jiangsu Province since 2015. The right to approximately 21,000 square meters facilities has been acquired on December 15, 2022. The other 6,000 square meters is expected to be transferred in 2023. In 2016, CSI Solar Manufacturing (Funing) obtained the land use right to a piece of land of approximately 133,000 square meters (Phase II and Phase III), on which we have built cell manufacturing facilities with a total floor area of approximately 26,000 square meters. The commercial operations have commenced since then and we obtained the certificates for property ownership of Phase II and Phase III cell manufacturing facilities in August 2018. In 2017, CSI Solar Manufacturing (Funing) obtained the land use right of approximately 34,000 square meters for the construction of Phase IV facilities, on which and former land, we are building manufacturing facilities with a total floor area of approximately 60,259.01 square meters and has obtain the certificate of property ownership on March 11, 2022 which consists of a consolidated land use right of Phase II and phase III with approximately 167,000 square meters and all built facilities of approximately 86,000 square meters.
- CSI Cells (Yancheng) Co., Ltd. has the land use right to a piece of land of approximately 134,000 square meters (Phase I) located in National Yancheng Economic Technical Development Zone of Yancheng City, Jiangsu Province. The floor area of cell manufacturing facilities (Phase I) is approximately 63,000 square meters. A part of the cell manufacturing facilities has completed construction and commenced operations since September 2018 and the entire Phase I facilities commenced operations in May 2019. In the same year of 2019, we made an advanced payment to purchase the Phase II land of approximately 64,000 square meters and have obtained the land use right in September 2020.
- CSI Changshu Manufacturing has the land use right to two pieces of land of approximately 40,000 square meters and 180,000 square meters, respectively, in Changshu City of Jiangsu Province, on which we have built module manufacturing facilities with a total floor area of approximately 165,000 square meters. We have obtained certificates of property ownership for all of CSI Changshu Manufacturing's facilities.
- CSI Modules (DaFeng) Co., Ltd. obtained the land use right to a piece of land of approximately 200,000 square meters in Yan-Cheng Da-Feng Economic Development District of Yancheng City, Jiangsu Province in 2017. The module production facility of approximately 78,000 square meters (Phase I) completed construction and production began in September 2018. We obtained the certificate of property ownership for Phase I in January 2020. On the same piece of land, we have built manufacturing facilities with a total floor area of approximately 67,000 square meters (Phase II) in May 2021, and obtained the certificate of property ownership in August 2021.
- Canadian Solar Sunenergy (Jiaxing) Co. Ltd. obtained the land use right to a piece of land of approximately 165,000 square meters in Jiaxing City of Zhejiang Province in 2018 on which we have constructed module manufacturing facilities with floor area of approximately 125,000 square meters (Phase I) by the end of 2020. We are presently building a manufacturing facility with floor area of approximately 101,000 square meters (Phase II).
- Canadian Solar Sunenergy (SuQian) Co., Ltd. has leased approximately 183,000 square meters of module manufacturing facilities for four years in Suqian City, Jiangsu Province commencing from Nov 28, 2020. Half of the facility has been started in production by the end of 2020.
- In Thailand, Canadian Solar Manufacturing (Thailand) Co., Ltd. has a land of 179.2 Rai (approximately 287,000 square meters) with the ownership certificate obtained. A module manufacturing facility of approximately 30,000 square meters and a cell manufacturing facility of approximately 19,000 square meters were built and production commenced in the third quarter of 2016 and in April 2017, respectively. The construction of another cell manufacturing facility with a floor area of approximately 18,000 square meters and a module manufacturing facility with a floor area of approximately 15,000 square meters were completed and the production commenced in the third quarter of 2019.
- In Vietnam, we lease approximately 16,000 square meters of module manufacturing facilities in Haiphong City, Vietnam since 2015. The lease was renewed for three years commencing August 7, 2018, then further renewed for another three years commencing August 7, 2021. Production began in 2015.
- In the United States, Recurrent Energy, LLC and Canadian Solar (USA) Inc. lease, in aggregate, approximately 22,000 square meters of office space in Austin, TX, Walnut Creek, CA, New York City, NY and San Francisco, CA.

- In January 2023, we entered into an investment agreement with the municipal government of Yangzhou City in Jiangsu Province, China to add 14 GW of annual wafer and cell capacity as phase I of a three-phase plan, expected to commence production in the second half of 2023.
- We construct and operate solar power systems in Brazil, Argentina, China and EU, and most of our solar power systems were built or being constructed on leased land. Approximately 1,425 hectares of land were leased for these solar power systems, with lease term ending between 2037 and 2056.

Except as disclosed in the “Item 3. Key Information—D. Risk Factors-Risks Related to Doing Business in China,” we believe we have obtained the environmental permits necessary to conduct the business currently carried on by us at our existing manufacturing facilities. For more details, see “B. Business Overview—Environmental Matters.”

ITEM 4A UNRESOLVED STAFF COMMENTS

None.

ITEM 5 OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes thereto included elsewhere in this annual report on Form 20-F. This discussion may contain forward-looking statements based upon 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. For discussion of 2020 and 2021 items and year-over-year comparisons between 2021 and 2020 that are not included in this annual report on Form 20-F, refer to “Item 5. —Operating and Financial Review and Prospects” found in our Form 20-F for the year ended December 31, 2021, that was filed with the Securities and Exchange Commission on April 28, 2022 and as amended on October 18, 2022.

In November 2021, we completed the transfer of the China Energy business from CSI Solar to the Global Energy segment to avoid any potential competition between us and our CSI Solar subsidiary, as part of the CSI Solar carve-out listing process. The scope of the transfer includes all of the project development and ownership business in China. Refer to “Item 5. Operating and Financial Review and Prospects—A. Operating Results—Segment Reporting” for further details.

A Operating Results

Factors Affecting Our Results of Operations

The most significant factors that affect our financial performance and results of operations are:

- solar power products pricing;
- costs of silicon raw materials and solar ingots, wafers and cells relative to the selling prices of modules;
- energy storage products pricing;
- renewable energy incentives and government grants;
- the availability of financing for solar and battery storage projects and the interest rate environment;
- industry and seasonal demand;
- impact of assets impairment;
- solar and battery storage project development and sale;
- antidumping, countervailing and other duty costs and true-up charges; and
- foreign exchange and hedging.

Solar Power Products Pricing

Before 2004, all of our net revenues were generated from sales of specialty solar modules and products. In 2004, we began selling standard solar modules. In 2021, we generated 68.8% of our net revenues from our sales of solar power products. In 2022, we generated 81.3% of our net revenues from our sales of solar power products.

Our standard solar modules are priced based on the actual flash test result or the nameplate capacity of our modules, expressed in watts-peak. The actual price per watt is affected by overall demand for modules in the solar power market and increasingly by the total power of the module. Higher-powered modules usually command slightly higher prices per watt.

We price our standard solar modules based on the prevailing market price at the time we enter into sales contracts with our customers, taking into account the size of the contract, the strength and history of our relationship with the customer and the costs of silicon raw materials and solar ingots, wafers and cells. In 2019 and 2020, the average selling price of our standard solar modules was approximately \$0.29 and \$0.25 per watt, respectively; in 2021 and 2022, it increased to approximately \$0.28 and \$0.30 per watt, respectively. Despite the increase in 2022, we expect the average selling price of our standard solar modules to continue to decline.

Costs of Silicon Raw Materials and Solar Ingots, Wafers and Cells Relative to the Selling Prices of Modules

We produce solar modules, which are an array of interconnected solar cells encased in a weatherproof frame, and products that use solar modules. Solar cells are the most important component of solar modules. Our solar cells are currently made from mono-crystalline solar wafers through multiple manufacturing steps. Solar wafers are the most important material for making solar cells. Solar ingots are the most important material for making solar wafers. If we are unable to procure silicon raw materials and solar ingots, wafers and cells at reduced prices in line with the decreasing selling prices of our solar modules, our revenues and margins could be adversely impacted, either due to higher manufacturing costs than our competitors or write-downs of inventory, or both. Our market share could decline if our competitors are able to offer better pricing than we do.

Energy Storage Products Pricing

Our energy storage offering consists of utility-scale battery storage solutions and residential battery storage products. In 2021 and 2022, we generated \$222.7 million and \$440.7 million of our revenues from sales of energy storage products, respectively. In 2022, we generated 5.9% of our net revenues from our sales of energy storage products.

Utility-scale battery storage solutions includes proprietary products, technology and integrated solutions focused on delivering high performance, safe and reliable battery storage solutions to enable utilities, independent power producers, and energy investors and users achieve energy savings, while maintaining power reliability and resilience.

EP Cube is our residential all-in-one energy storage solutions that allow users to increase the efficiency of their self-consumption solar PV installations by storing, managing and using the electricity generated with their own PV system. EP Cube is a flexible and smart solution that optimizes costs and reduces users' reliance on the electrical grid, at a time of elevated electricity prices.

Our energy storage products are priced based on the actual storage capacity, expressed in watts-hour. The actual price per watt-hour is affected by market demand, the total storage capacity of the product and the cost of materials. Energy storage products with higher storage capacity usually command slightly higher prices per watt-hour.

Renewable Energy Incentives and Government Grants

Over the past few years, the cost of solar energy has generally declined and the industry has become less dependent on government incentives. However, governments in some of our largest markets have expressed their intention to continue supporting various forms of "green" energies, including solar power, as part of broader policies towards the reduction of carbon emissions. The governments in many of our largest markets, including the U.S. and a number of the states of the EU (including, but not limited to, Italy, France, Germany, Spain and Poland) continue to provide incentives and policy support schemes for investments in solar power that will directly benefit the solar industry. In particular, in the United States, renewable energy projects currently benefit from various federal, state and local governmental incentives, such as ITCs, PTCs and Renewable Portfolio Standards ("RPS") programs, accelerated tax depreciation, and other incentives provided for under the Inflation Reduction Act of 2022 ("IRA"), signed into law on August 16, 2022. The IRA provisions is further expected to expand the ITC to include stand-alone energy storage projects and introduce the ability of asset owners to transfer tax credits created under the IRA to third parties, which is expected to help address the lack of sufficient tax equity capacity. We believe that the near-term growth of the market still depends in large part on the availability and size of such government subsidies and economic incentives.

For a detailed discussion of the impact of government subsidies and incentives, possible changes in government policy and associated risks to our business, see "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Governments may revise, reduce or eliminate incentives and policy support schemes for solar and battery storage power, which could cause demand for our products to decline." and "Item 4. Information on the Company—B. Business Overview—Sales, Marketing and Customers."

The Availability of Financing for Solar and Battery Storage Projects and the Interest Rate Environment

Most solar and battery storage projects, including our own, require financing for development and construction with a mixture of equity and third-party funding. A high cost of capital may materially reduce the internal rate of return for solar and battery storage projects and therefore put downward pressure on the prices of solar systems, solar modules and battery storage systems, which typically comprise a major part of the cost of solar and battery storage projects. Furthermore, solar and battery storage projects compete for capital with other forms of fixed income investments such as government and corporate bonds. Some classes of investors compare the returns of solar and battery storage projects with bond yields and expect a similar or higher internal rate of return, adjusted for risk and liquidity. Higher interest rates could increase the cost of existing funding and present an obstacle for future funding that would otherwise spur the growth of the solar power and battery storage industry.

An increase in interest rates or a decrease in funding of capital projects within the global financial market could make it difficult to fund solar power and battery storage systems and potentially reduce the demand for solar modules and battery storage systems and/or reduce the average selling prices for solar modules and battery storage systems, which may materially and adversely affect our business, results of operations, financial condition and prospects.

For a detailed discussion of the impact of the availability and cost of debt or equity for solar and battery storage projects and our customers' ability to finance the purchase of our products or to construct solar and battery storage projects, see "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—The execution of our growth strategy depends upon the continued availability of third-party financing arrangements for our customers, which is affected by general economic conditions. Tight credit markets could depress demand or prices for solar power and battery storage products and services, hamper our expansion and materially affect our results of operations."

Industry and Seasonal Demand

Our business and revenues depend on the demand for solar power. Although solar power technology has been used for several decades, the solar power market has only started to grow significantly in the past few years. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—We may be adversely affected by volatile solar power market and industry conditions; in particular, the demand for our solar power and battery storage products and services may decline, which may reduce our revenues and earnings." Industry demand is affected by seasonality. Demand tends to be lower in winter, when adverse weather conditions can complicate the installation of solar power systems, thereby decreasing demand for solar modules. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Seasonal variations in demand linked to construction cycles and weather conditions may influence our results of operations."

Recently, national or regional interconnection capacity and interconnection queue backlog in the U.S. and certain countries are becoming more constrained and longer, respectively. In addition, the variability in value of solar electricity generated between low value periods and high value periods have significantly increased. As a result, solar power plants and systems will increasingly incorporate battery storage in order to shift the feed of electricity into the grid to benefit from peak demand periods and overcome limitations in grid transmission capacity. The current electricity and capacity market design and rules may not adequately compensate for the integration of battery storage systems, and as such may hinder, slow down or limit the growth rate of solar adoption and implementation.

Impact of Assets Impairment

For our property, plant and equipment, solar power systems, investments in affiliates, and project assets, if their fair value is less than their carrying value or their carrying value cannot be recoverable, we need to record an impairment loss. We had impairment loss of \$62.4 million for our property, plant and equipment, investments in affiliates, and project assets in 2022.

Our business development and operation involve numerous risks and uncertainties which could lead to the assets' impairment. These risks and uncertainties include what have been discussed in "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—We may not continue to be successful in developing and maintaining a cost-effective solar cell, wafer and ingot manufacturing capability;" and "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Our project development and construction activities may not be successful, projects under development may not receive required permits, property rights, EPC agreements, interconnection and transmission arrangements, and financing or construction of projects may not commence or continue as scheduled, all of which could increase our costs, delay or cancel a project, and have a material adverse effect on our revenue and profitability."

Solar and Battery Storage Project Development and Sale

Revenues generated from our Global Energy segment accounted for 11.0% of our net revenues in 2022. The majority of these revenues came from the sale of solar and battery storage projects. We plan to grow our volume of project sales while holding and accumulating assets in order to better capture value of our project assets.

Our revenues from the Global Energy segment are affected by the timing of the completion and our timing and strategy of monetization of solar and battery storage projects. See “Item 4. Information on the Company—B. Business Overview—Sales, Marketing and Customers—Global Energy Segment—Solar Project Development” for a description of the development pipeline of our solar and battery storage projects.

Solar power and battery storage project development and sale involve numerous risks and uncertainties. For a detailed discussion of these risks and uncertainties, see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Our future success depends partly on our ability to expand the development pipeline of our energy business in several key markets, which exposes us to a number of risks and uncertainties” and “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Our project development and construction activities may not be successful, projects under development may not receive required permits, property rights, EPC agreements, interconnection and transmission arrangements, and financing or construction of projects may not commence or continue as scheduled, all of which could increase our costs, delay or cancel a project, and have a material adverse effect on our revenue and profitability.”

Antidumping, Countervailing and Other Duty Costs and True-up Charges

We have been in the past, and may be in the future, subject to antidumping and countervailing duty rulings and orders. In particular, we have been subject to antidumping and countervailing duty rulings in the U.S., the EU, and Canada and have, as a result, been party to lengthy proceedings related thereto. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings.” The U.S., the EU, the U.K. and Canada are important markets for us. Ongoing proceedings relating to, and the imposition of any new, antidumping and countervailing duty rulings and orders or safeguard measures in these markets may result in additional costs to us and/or our customers.

In 2022, we booked the benefits of antidumping and countervailing duty provision reversals of \$2.4 million, primarily associated with prior years’ module sales based on the updated rates arising from the administrative reviews carried out by the U.S. Department of Commerce.

Foreign Exchange and Hedging

The majority of our sales were denominated in U.S. dollars, Renminbi and Euros, with the remainder in other currencies such as Brazilian reals, Japanese yen, South African rand, Australian dollars and British pounds. The majority of our costs and expenses were denominated in Renminbi, primarily related to purchases of silicon, solar wafers and cells, and other raw materials, including PV glass, aluminum, silver metallization paste, solar module back sheet, ethylene vinyl acetate, encapsulant, toll manufacturing fees, labor costs and local overhead expenses within the PRC. From time to time, we enter into loan arrangements with commercial banks that are denominated primarily in Renminbi, U.S. dollars, Japanese yen, Brazilian reals and Euros. The majority of our cash and cash equivalents and restricted cash is denominated in Renminbi and U.S. dollars. The relative value of the U.S. dollars that turned stronger in 2022 had an unfavorable effect on our ASP in certain markets and contributed a favorable impact in manufacturing cost denominated in Renminbi and Thai baht. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Fluctuations in exchange rates could adversely affect our business, including our financial condition and results of operations.”

Segment Reporting

We use the management approach to determine operating segments. The management approach considers the internal organization and reporting used by our chief operating decision maker for making decisions, allocating resources and assessing performance. We have identified our chief executive officer as our chief operating decision maker, since he reviews consolidated and segment results when making decisions about allocating resources and assessing performance for us.

In July 2020, we reached a strategic decision to pursue a listing of our subsidiary, CSI Solar, in China. The scope of the transfer includes all of the project development and ownership business in China. From November 2021, we completed the transfer of the China Energy assets from CSI Solar to the Global Energy segment to avoid any potential competition between ourselves and our CSI Solar subsidiary, as part of the CSI Solar carve-out listing process. As a result, we report our financial performance, including revenue, gross profit and income from operations, based on the following two reportable business segments:

- **CSI Solar**, which consists of solar module manufacturing and total system solutions, including inverters, solar system kits and EPC (engineering, procurement and construction) services. The CSI Solar segment also includes the Company's battery storage system integration business, delivering bankable, end-to-end, turnkey battery storage solutions for utility-scale, commercial and industrial, and residential applications. These storage systems solutions are complemented with long-term service agreements, including future battery capacity augmentation services.
- **Global Energy**, carries out our global project development activities for both solar and battery storage project development, which include sourcing land, interconnection agreements, structuring power purchase agreements (PPAs) and other permits and requirements. The Global Energy segment develops both stand-alone solar and stand-alone battery storage projects, as well as hybrid solar plus storage projects. Its monetization strategies vary between develop-to-sell, build-to-sell, and build-to-own, depending on business strategies and market conditions, with the goal of maximizing returns, accelerating cash turn, and minimizing capital risk.

Impact of COVID-19

The COVID-19 pandemic has continued to pose significant challenges to many aspects of our business, including our operations, customers, suppliers and projects. Global commerce generally has been negatively affected due to travel restrictions, disruptions of global supply chain, shipping and logistics systems, quarantines, and other measures taken by governments. Near-term global economic growth has also been adversely impacted. As a result, investors may have a reduced appetite for equity investment in the near term; credit markets may become unsettled in the near term; and project installation activities may see delays.

We continue to take mitigation strategies to reduce the adverse impact of COVID-19 to our business. For our CSI Solar business, we closely monitor market changes; secure orders by leveraging our channel strength and brand loyalty; adjust production plans by, for example, increasing the amount of "build-to-order" production and reducing "build-to-stock" production; tightening credit controls to reduce potential credit losses; and accelerating R&D and product development to improve our product offerings ahead of an eventual market recovery. For our Global Energy business, we closely monitor market changes; renegotiate PPA execution dates; leverage our global footprint to ensure access to financing; and start construction on critical projects to sell later. We will continue to monitor and adhere to the policies, lockdowns, restrictions, and preventive measures implemented by the various government authorities, as well as general movement restrictions, social distancing and other measures imposed that may continue to evolve.

See "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—We face risks related to natural disasters, health epidemics, such as COVID-19, and other catastrophes, which could significantly disrupt our operations." for further discussion.

Overview of Financial Results

We evaluate our business using a variety of key financial measures.

Net Revenues

CSI Solar Segment

Revenues generated from our CSI Solar segment accounted for 78.7% and 89.0% of our net revenues in 2021 and 2022, respectively. Our revenues from our CSI Solar segment are affected primarily by average selling prices per watt and unit volumes shipped of solar power products, as well as the average selling price per watt-hour and unit volumes shipped of battery storage solutions products, all of which depend on product supply and demand. Our revenues from sales to customers are recorded net of sales taxes, goods and services taxes, value added taxes, and estimated returns.

Global Energy Segment

Revenues generated from our Global Energy segment accounted for 21.3% and 11.0% of our net revenues in 2021 and 2022, respectively. Our revenues from our Global Energy segment are affected primarily by the timing of the completion and our timing and strategy of monetization of solar and battery storage projects. See "Item 4. Information on the Company—B. Business Overview—Sales, Marketing and Customers—Global Energy Segment—Battery Storage Project Development" for a description of the status of our solar and battery storage projects.

Revenue recognition for our Global Energy segment is not necessarily linear in nature due to the timing of when all relevant revenue recognition criteria for the sale of our solar and battery storage projects have been met. During 2022, our Global Energy segment

recognized \$761.7 million of revenue from the sale of solar and battery storage projects. Our revenue recognition policies for the Solar and battery storage projects development are described in “—Critical Accounting Estimates—Revenue.”

Cost of Revenues

CSI Solar Segment

The cost of revenues of our CSI Solar segment consists primarily of the costs of:

- high purity and solar grade silicon materials;
- solar cells;
- silicon wafers;
- other materials for the production of solar cells or modules such as metallic pastes, glass, aluminum frames, ethylene vinyl acetate (“EVA”, an encapsulant used to seal the module), junction boxes and polymer back sheets;
- materials used in inverters and energy storage production, such as IGBT module, magnetic components, sheet metal customization components, lithium iron phosphate battery cells and storage inverters;
- production labor, including salaries and benefits for manufacturing personnel;
- warranty costs;
- overhead, including utilities, production equipment maintenance, and other support expenses associated with the manufacture of our solar power and energy storage products;
- depreciation and amortization of manufacturing equipment and facilities, which are increasing as we expand our manufacturing capabilities;
- solar power project EPC services; and
- antidumping, countervailing and other duty costs and true-up charges.

Before 2009, we typically sold our standard solar modules with a two-year guarantee for defects in materials and workmanship and a 10-year and 25-year warranty against declines of more than 10% and 20%, respectively, from the initial minimum power generation capacity at the time of delivery. In 2009, we increased our guarantee for defects in materials and workmanship to six years. In 2011, we increased our guarantee for defects in materials and workmanship to ten years. In 2019, we increased our guarantee for defects in materials and workmanship up to twelve years. In 2022, we increased our guarantee for defects in materials and workmanship up to fifteen years or twenty-five years for certain module types, and we warrant that, for a period of 25 years, our Ku/HiKu modules will maintain the following performance levels:

- during the first year, the actual power output of the module will be no less than 97.5% of the labeled power output;
- from the second year to the 25th year, the actual annual power output decline of the module will be no more than 0.55%; and
- by the end of the 25th year, the actual power output of the module will be no less than 84.8% of the labeled power output.

We have provided warranty against decline in performance for our bifacial module and double glass module products for 30 years.

In resolving claims under the workmanship guarantee, we have the option of remedying the defect through repair, refurbishment or replacement of equipment. In resolving claims under the performance warranty, we have the right to repair or replace solar modules at our option.

We warrant our battery storage products for a specific amount of time against performance or manufacturing defects. The warranty is typically for an initial term of 5 years from the date of installation, with an option for annual extensions for an additional 15 years. We have obtained warranties from our battery cell manufacturer suppliers to back up a portion of our warranties.

We believe our warranty periods are consistent with industry practice. Due to the long warranty period, we bear the risk of extensive warranty claims long after we have shipped our products and recognized revenue. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—We may be subject to unexpected warranty and product quality expenses that may not be adequately covered by our insurance policies.”

We maintain warranty reserves to cover potential liabilities that could arise under these guarantees and warranties. We currently take a 1% warranty provision against our revenue from sales of solar power products.

We have entered into agreements with a group of insurance companies with high credit ratings to back up a portion of our warranties. Under the terms of the insurance policies, which are designed to match the terms of our solar module product warranty policy, the insurance companies are obliged to reimburse us, subject to certain maximum claim limits and certain deductibles, for the actual product warranty costs that we incur under the terms of our solar module product warranty policy. We record the insurance premiums initially as prepaid expenses and amortize them over the respective policy period of one year. The warranty insurance is renewable annually. See “—Critical Accounting Estimates—Warranties.”

In 2022, we booked the benefits of antidumping and countervailing duty provision reversals of \$2.4 million, primarily associated with prior years’ module sales based on the updated rates arising from the administrative reviews carried out by the U.S. Department of Commerce.

Global Energy Segment

The cost of revenues of our Global Energy segment consists primarily of the costs of:

- acquiring solar and battery storage projects;
- acquiring and developing solar power and battery storage project sites, including interconnection fees and permitting costs;
- interest capitalized for solar and battery storage projects during construction period;
- operating and maintaining solar power systems, including depreciation of solar power systems; and
- impairment of project assets.

For solar and battery storage projects built by us, we provide a limited workmanship or balance of system warranty against defects in engineering design, installation and construction under normal use, operation and service conditions generally for a period of two years following the energizing of the solar project. In resolving claims under the workmanship or balance of system warranty, we have the option of remedying through repair, refurbishment or replacement of equipment. We have entered into similar workmanship warranties with our suppliers to back up our warranties. We maintain warranty reserves to cover potential liabilities that could arise under these guarantees and warranties.

Before commissioning solar and battery storage projects, we conduct performance testing to confirm that the projects meet the operational and capacity expectations set forth in the agreements. In limited cases for solar power projects, we also provide for an energy generation performance test designed to demonstrate that the actual energy generation for up to the first three years meets or exceeds the modeled energy expectation (after adjusting for actual solar irradiation). In the event that the energy generation performance test performs below expectations, the appropriate party (EPC contractor or equipment provider) may incur liquidated damages capped at a percentage of the contract price.

Gross Profit/Gross Margin

Our gross profit is affected by a number of factors, including but not limited to the success of and contribution from both of our operating segments, the average selling price of our solar power and battery storage products, our product mix, loss on firm purchase commitments under long-term supply agreements, our ability to cost-effectively manage our supply chain, write-down of inventories, tariffs, taxes and AD/CVD, the timing of completion of construction of our solar and battery storage projects, the timing and pricing of project sales and financing, wholesale electricity price, and impairment of project assets.

Operating Expenses

Our operating expenses include selling and distribution expenses, general and administrative expenses, research development expenses and other operating income, net. Our operating expenses increased in 2021 and 2022. We expect our operating expenses to increase as our net revenues grow in the future.

Selling and Distribution Expenses

Selling and distribution expenses consist primarily of transportation and customs expenses for delivery of our products, salaries and benefits, sales commissions for our sales agents, advertising, promotional and trade show expenses, and other sales and marketing expenses. Our selling and distribution expenses increased in 2021 and 2022. We expect that as we increase our sales volumes in the

future, our selling and distribution expenses will increase as we incur more transportation and customs costs, hire additional sales personnel, target more markets, launch more products, and initiate additional marketing programs to reach our goal of continuing to be a leading global brand.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and benefits for our administrative and finance personnel, consulting and professional service fees, government and administration fees, insurance fees and impairment of long-lived assets. Our general and administrative expenses increased in 2021 and 2022.

Research and Development Expenses

Research and development expenses consist primarily of costs of raw materials used in our research and development activities, salaries and benefits for research and development personnel and prototype and equipment costs related to the design, development, testing and enhancement of our products and our silicon reclamation program. Refer to “C. Research and Development” for further details of our research and development activities. In 2021 and 2022, our research and development expenses accounted for 1.1% and 0.9%, respectively, of our total net revenues. We expect that our research and development expenses will increase as we devote more efforts to research and development in the future.

Other Operating Income, Net

Other operating income, net, primarily consists of government grants received, gains or losses on disposal of solar power systems and property, plant and equipment, and insurance claims on weather-related project damages.

Interest Expense

Interest expense consists primarily of interest incurred with respect to our short and long-term borrowings from banks and other lenders, and the convertible senior notes issued by us in September 2020.

Gain (Loss) on Change in Fair Value of Derivatives

We have entered into foreign currency derivatives to hedge part of the risks of our expected cash flows, mainly in Renminbi, Euros, Canadian dollars and South African rand, commodity hedge to manage part of risks of rising raw material costs, and interest rate swap to hedge the part of risks of floating interest rate. In 2021, we had a gain on the change in fair value of derivatives of \$23.8 million, which included a \$22.8 million gain on change in fair value of foreign currency derivatives, net and a \$1.0 million gain in change in fair value of commodity hedge, net. In 2022, we had a loss on the change in fair value of derivatives of \$44.5 million, which included a \$40.5 million loss on change in fair value of foreign currency derivatives, net and a \$4.0 million loss in change in fair value of commodity hedge.

Income Tax Benefit (Expense)

We recognize deferred tax assets and liabilities for temporary differences between the financial statement and income tax bases of assets and liabilities. Valuation allowances are provided against deferred tax assets when management cannot conclude that it is more likely than not that some portion or all deferred tax assets will be realized.

We are governed by the OBCA and are registered to carry on business in Ontario, with a permanent establishment in Ontario. This subjects us to Canadian federal and Ontario provincial corporate income taxes. Our combined tax rate was 26.5% for each of the years ended 2021 and 2022.

PRC enterprise income tax is calculated based on taxable income determined under PRC accounting principles with a uniform enterprise income tax rate of 25%. Certain of our PRC subsidiaries, such as CSI New Energy Holding Co., Ltd., or CSI New Energy Holding, Canadian Solar Manufacturing (Luoyang) Inc., or CSI Luoyang Manufacturing, were once HNTEs and enjoyed preferential enterprise income tax rates. These benefits have, however, expired. In 2022, only Suzhou Sanysolar Materials Technology Co., Ltd, Changshu Tegu New Material Technology Co., Ltd, CSI New Energy Development (Suzhou) Co., Ltd (formerly known as Suzhou Gaochuangte New Energy Development Co., Ltd), Canadian Solar Photovoltaic Technology (Luoyang) Co., Ltd. and Changshu Tlian Co., Ltd were HNTEs and enjoyed preferential enterprise income tax rates.

Under the EIT Law and implementing regulations issued by the State Council, the PRC withholding tax rate of 10% is generally applicable to interest and dividends payable to investors that are not “resident enterprises” in the PRC, to the extent such interest or

dividends have their sources within the PRC. In prior years, we assumed all of the undistributed earnings of our PRC subsidiaries to be indefinitely reinvested in China, and, consequently, we have made no provision for withholding taxes for those amounts.

Share-based Compensation Expenses

Under our share incentive plan, as of December 31, 2022, we had outstanding:

- 26,291 stock options; and
- 116,500 restricted shares; and
- 3,189,376 restricted share units.

For a description of the stock options, restricted share units and restricted shares granted, including the exercise prices and vesting periods, see “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Share Incentive Plan.” We recognize share-based compensation to employees as expenses in our statement of operations based on the fair value of the equity awards on the date of the grant. The compensation expense is recognized over the period in which the recipient is required to provide services in exchange for time-based equity awards, and is recognized at the occurrence of certain contingent events (such as the successful carve-out IPO of CSI Solar) for performance-based equity awards.

We have made an estimate of expected forfeitures and recognize compensation costs only for those equity awards that we expect to vest. We estimate our forfeitures based on past employee retention rates and our expectations of future retention rates. We prospectively revise our forfeiture rates based on actual history. Our share-based compensation expenses may change based on changes in actual forfeitures.

For the year ended December 31, 2022, we recorded share-based compensation expenses of \$9.4 million, compared to \$8.8 million for the year ended December 31, 2021. We have allocated these share-based compensation expenses to our cost of revenues, selling and distribution expenses, general and administrative expenses and research and development expenses, depending on the job functions of the individuals to whom we granted the restricted share units.

The following table sets forth, for the periods indicated, the allocation of our share-based compensation expenses both in absolute amounts and as a percentage of total share-based compensation expenses.

	Years Ended December 31,			
	2021		2022	
	(In thousands of \$, except for percentages)			
Share-based compensation expenses included in:				
Cost of revenues	1,044	11.9 %	1,046	11.1 %
Selling and distribution expenses	2,284	25.9 %	2,285	24.4 %
General and administrative expenses	4,878	55.4 %	5,429	58.0 %
Research and development expenses	602	6.8 %	610	6.5 %
Total share-based compensation expenses	8,808	100.0 %	9,370	100.0 %

We expect to incur additional share-based compensation expenses as we expand our operations and complete the carve-out IPO of CSI Solar.

Recently Issued Accounting Pronouncements

See note 2(al) Recently issued accounting pronouncements in the notes to our consolidated financial statements, included herein.

Results of Operations

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

	For the year ended December 31,			
	2021	(in thousands of \$, except percentages)		2022
Net revenues	5,277,169	100.0 %	7,468,610	100.0 %
CSI Solar segment	4,371,603	82.8 %	6,975,612	93.4 %
Global Energy segment	1,124,083	21.3 %	821,525	11.0 %
Elimination	(218,517)	(4.1)%	(328,527)	(4.4)%
Cost of revenues	4,367,857	82.8 %	6,205,474	83.1 %
CSI Solar segment	3,689,126	69.9 %	5,824,855	78.0 %
Global Energy segment	930,099	17.6 %	660,161	8.8 %
Elimination	(251,368)	(4.8)%	(279,542)	(3.7)%
Gross profit	909,312	17.2 %	1,263,136	16.9 %
CSI Solar segment	682,477	12.9 %	1,150,757	15.4 %
Global Energy segment	193,984	3.7 %	161,364	2.2 %
Elimination	32,851	0.6 %	(48,985)	(0.7)%
Operating expenses:				
Selling and distribution expenses	398,650	7.6 %	558,926	7.5 %
General and administrative expenses	308,942	5.9 %	342,129	4.6 %
Research and development expenses	58,407	1.1 %	69,822	0.9 %
Other operating income, net	(47,068)	(0.9)%	(63,802)	(0.9)%
Total operating expenses	718,931	13.6 %	907,075	12.1 %
Income from operations	190,381	3.6 %	356,061	4.8 %
Other income (expenses)				
Interest expense	(58,153)	(1.1)%	(74,266)	(1.0)%
Interest income	11,051	0.2 %	40,615	0.5 %
Gain (loss) on change in fair value of derivatives, net	23,785	0.5 %	(44,489)	(0.6)%
Foreign exchange gain (loss), net	(47,234)	(0.9)%	77,689	1.0 %
Investment income, net	18,634	0.4 %	858	0.0 %
Total other income (expense)	(51,917)	(1.0)%	407	0.0 %
Income before income taxes and equity in earnings of affiliates	138,464	2.6 %	356,468	4.8 %
Income tax expense	(35,844)	(0.7)%	(73,353)	(1.0)%
Equity in earnings of affiliates	7,256	0.1 %	15,440	0.2 %
Net income	109,876	2.1 %	298,555	4.0 %
Less: Net income attributable to non-controlling interests	14,628	0.3 %	58,587	0.8 %
Net income attributable to Canadian Solar Inc.	95,248	1.8 %	239,968	3.2 %

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Net Revenues. Our total net revenues increased \$2,191.4 million, or 41.5%, from \$5,277.2 million in 2021 to \$7,468.6 million in 2022. The increase was due to higher solar module shipments recognized in revenue from 14.3 GW to 21.1 GW, an increase in the average selling price of our solar modules, an increase in revenue contribution in utility-scale battery storage business, partially offset by decreased sale of solar and battery storage projects. Revenue contribution from Americas region increased 23% from \$2,279.6 million in 2021 to \$2,793.6 million in 2022 with expansion in the U.S. and Brazil, Asia region increased 28.1% from \$2,139.1 million in 2021 to \$2,739.8 million in 2022 with expansion in China, and Europe and others region increased 125.4% from \$858.5 million in 2021 to \$1,935.2 million in 2022 with expansion in Spain, U.K. and Germany.

- **CSI Solar Segment.** Revenues increased by 59.6% from \$4,371.6 million in 2021 to \$6,975.6 million in 2022. Solar modules revenues were \$3,546.8 million in 2021 and \$5,744.8 million in 2022, increased by 62.0%, of which 50.4% was attributable to an increase in volume of shipments and 11.6% was attributable to an increase in the average selling price of our solar modules. Our solar system kits revenues increased by 78.1% from \$302.1 million in 2021 to \$538.2 million in 2022.

Our utility-scale battery storage solutions business revenues significantly increased 135.6% from \$222.7 million in 2021 to \$524.5 million in 2022. Our residential battery storage revenue was \$0.7 million in 2022.

Our solar module shipments recognized in revenue for 2022 were 21.1 GW, an increase of 47.2% from 14.3 GW for 2021. Within these shipments, 0.7 GW and 0.9 GW represented sales to Global Energy segment in 2022 and 2021, respectively. Shipments to Asian region increased by 3.1 GW to 9.7 GW for 2022, from 6.6 GW for 2021. Shipments to European and other regions increased by 2.2 GW to 5.4 GW for 2022, from 3.2 GW for 2021. Shipments to the Americas region increased by 1.5 GW to 6.0 GW for 2022, from 4.5 GW for 2021.

The average selling price of our solar modules increased from \$0.28 per watt in 2021 to \$0.30 per watt in 2022. The increase was driven by higher raw material and supply chain costs, coupled with our improved ASP in premium markets as we deliver greater system-value to our customers.

- **Global Energy Segment.** Revenues decreased by \$302.6 million, or 26.9%, from \$1,124.1 million in 2021 to \$821.5 million in 2022. The decrease in sales of solar and battery storage projects revenues was due to a \$288.0 million decrease in sales in the U.S., a \$220.4 million decrease in sales in Japan and a \$113.8 million decrease in sales in Mexico, partially offset by an increase of \$264.2 million in sales in Australia and an increase of \$41.6 million in sales in China.

Cost of Revenues. Our total cost of revenues increased \$1,837.6 million, or 42.1%, from \$4,367.9 million in 2021 to \$6,205.5 million in 2022. The increase was primarily due to higher solar module shipments and higher raw material and supply chain costs in our manufacturing operations. Total cost of revenues as a percentage of total net revenues increased from 82.8% in 2021 to 83.1% in 2022.

- **CSI Solar Segment.** Cost of revenues increased by \$2,135.8 million, or 57.9%, from \$3,689.1 million in 2021 to \$5,824.9 million in 2022. During 2022, cost of polysilicon continued to increase. Simultaneously, the costs of lithium accelerated higher. These costs impact was partially mitigated by manufacturing cost efficiency as we expanded in scale. Our monthly average module manufacturing cost in China, including purchased polysilicon, wafers and cells, increased to \$0.236 per watt in 2022 from \$0.227 per watt in 2021.

In 2022, our results of operations continued to be impacted by the rising supply chain costs. We took actions in the first three quarters to build higher buffer inventories to improve cost certainty for our manufacturing operations and in anticipation of the higher solar module shipments outlook. We lowered our inventories towards the end of the year in anticipation of a decline in raw material costs and improvement in shipping transit times.

Our inventories are held in our manufacturing facilities to cater to production forecast, and in transit to third-party logistical centers to facilitate shipment of solar modules to the ultimate sales destination. The inventory balances held by us represent the volumes we believe are necessary and sufficient to execute our growth strategies. We have funded our working capital increase in inventories by \$181.0 million, \$518.7 million and \$406.3 million in 2020, 2021 and 2022, respectively, primarily through cash flows generated from operations, but also with short-term borrowings, as needed.

We continue to track supply chain constraints and cost trends, and depending on our expectation of the supply-demand imbalance from time to time, we may take steps to mitigate the potential impacts by building buffers in our materials inventory as described above, and we will ensure that our suppliers have adequate access to materials level aligned to our forecasts. Additionally, we may enter into long-term supply agreements with silicon and wafer suppliers in order to secure a stable supply of raw materials to meet our production requirements.

We have not experienced significant shortage in our supply chain. However, any supply chain disruption for materials and essential components of our solar power products could significantly delay the shipment of our solar power products and have a material adverse effect on our revenues, profitability and financial condition. For further discussion, see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Supply chain issues, including shortages of adequate raw materials, component and equipment supply, cancellation or delay of purchase orders, inflationary pressures and cost escalation could adversely affect our business, results of operations and relationship with customers, particularly given our dependence on a limited number of suppliers of key elements like silicon wafers and cells.”

For 2022, we recognized \$2.4 million of reversal benefits from our provision for antidumping and countervailing duty associated with prior years’ module sales based on the updated rates arising from the administrative reviews carried out by the USDOC.

- **Global Energy Segment.** Cost of revenues decreased by \$269.9 million, or 29.0%, from \$930.1 million in 2021 to \$660.2 million in 2022. The decrease corresponded to the \$302.5 million decrease in solar and battery storage project sales, in particular the significant decrease of \$220.4 million in Japan project sales, as Japanese projects usually carry higher development and construction costs.

Gross Profit. Our total gross profit increased by \$353.8 million, from \$909.3 million in 2021 to \$1,263.1 million in 2022. Our total gross margin decreased from 17.2% in 2021 to 16.9% in 2022.

- *CSI Solar Segment.* Gross profit increased by \$468.3 million from \$682.5 million in 2021 to \$1,150.8 million in 2022, driven by solar module sales volume increase from 14.3 GW in 2021 to 21.1 GW in 2022. Gross margin increased from 15.6% in 2021 to 16.5% in 2022, due to an increase in solar module ASP as we passed through some of our increased costs to customers and improved our ASP in premium markets.
- *Global Energy Segment.* Gross profit decreased by \$32.6 million from \$194.0 million in 2021 to \$161.4 million in 2022, driven by decrease in solar and battery storage project sales. Gross margin increased from 17.3% in 2021 to 19.6% in 2022 due to a higher proportion of high-margin project sales.

Operating Expenses. Our operating expenses increased by \$188.2 million, or 26.2%, from \$718.9 million in 2021 to \$907.1 million in 2022, driven by an increase in our selling and distribution expenses. Operating expenses as a percentage of our total net revenues decreased to 12.1% in 2022 from 13.6% in 2021 as we benefited from larger operating scale.

Selling and Distribution Expenses. The increase of \$160.2 million, or 40.2%, was primarily due to an increase of \$137.5 million in shipping and handling expenses which was contributed by the increase in module shipment volume and higher transportation costs, an increase of \$14.6 million in warehousing expenses, an increase of \$5.2 million in personnel cost, partially offset by a decrease of \$3.6 million in customer claim expenses. Selling and distribution expenses as a percentage of our net total revenues decreased from 7.6% in 2021 to 7.5% in 2022.

General and Administrative Expenses. The increase of \$33.2 million, or 10.7%, was primarily due to an increase of \$53.9 million in long-lived asset impairment charges, an increase of \$12.0 million in personnel cost, an increase of \$10.5 million in legal and consulting costs, partially offset by a decrease of \$27.8 million in depreciation expenses as we experienced an accelerated depreciation in 2021, and a decrease of \$10.0 million from a non-recurring termination cost related to a project asset in 2021. General and administrative expenses as a percentage of our total net revenues decreased from 5.9% in 2021 to 4.6% in 2022.

Research and Development Expenses. The increase of \$11.4 million, or 19.5%, was due to increased research and development activities during 2022. Research and development expenses as a percentage of our total net revenues were 1.1% in 2021 and 0.9% in 2022. Refer to "C. Research and Development" for further details of our research and development activities.

Other Operating Income, Net. Our other operating income, net, increased by \$16.7 million, or 35.6% from \$47.1 million in 2021 to \$63.8 million in 2022. The increase was due to an increase of \$21.1 million in government grants.

Interest Expense, Net. Our interest expense, net, decreased \$13.5 million, or 28.6%, in 2022. Interest expense increased by \$16.1 million, or 27.7%, in 2022 as we increased our borrowings and experienced higher interest rates, particularly in U.S. dollar, Euros and Brazilian reals denominated debts. Our debt balance, including our convertible bond, increased to \$2,514.8 million as of December 31, 2022 compared to \$2,374.9 million as of December 31, 2021. Interest income increased by \$29.6 million, or 267.5%, from \$11.1 million in 2021 to \$40.6 million in 2022. We benefited from \$19.6 million of interest income generated by the anti-dumping and countervailing duty deposit refunds. Our interest income also increased as a result of the increase in our cash and cash equivalent and restricted cash balance to \$1,969.5 million as of December 31, 2022, from \$1,434.3 million as of December 31, 2021.

Gain (Loss) on Change in Fair Value of Derivatives, Net. We recorded a loss of \$44.5 million on change in fair value of derivatives in 2022, compared to a gain of \$23.8 million in 2021. The loss recorded in 2022 was due to a loss of \$40.5 million on change in fair value of foreign currency derivatives, net led by a stronger U.S. dollar environment, and a loss of \$4.0 million on change in fair value of aluminum and silver commodity hedge. The gain recorded in 2021 was due to a gain of \$22.8 million on change in fair value of foreign currency derivatives, net and a gain of \$1.0 million on change in fair value of commodity hedge, net.

Foreign Exchange Gain (Loss), net. We recorded a foreign exchange gain of \$77.7 million in 2022, compared to a foreign exchange loss of \$47.2 million in 2021. The gain in 2022 was primarily due to the effect of a stronger U.S. dollar against Renminbi, for which we incurred a significant portion of our manufacturing costs.

Investment Income, net. We recorded lower investment income of \$0.9 million in 2022 compared to \$18.6 million in 2021. During 2021, we sold our non-controlling interests in a portfolio of solar projects to our local investment partner.

Income Tax Expense. We recognized an income tax expense of \$73.3 million in 2022, compared to an income tax expense of \$35.8 million in 2021. Our effective tax rate decreased in 2022 compared to 2021 as we generated a higher proportion of our income in lower tax jurisdictions across Asia.

Equity in Earnings of Affiliates. Our share of the earnings of affiliates was a net gain of \$15.4 million and \$7.3 million in 2022 and 2021, respectively.

Net Income Attributable to Non-Controlling Interests. The net income attributable to non-controlling interests is the share of net income attributable to the interests of non-controlling shareholders in CSI Solar Co., Ltd and certain of our project companies in Japan, Mexico and Australia. We recorded a higher net income attributable to non-controlling interests of \$58.6 million in 2022 compared to \$14.6 million in 2021, as we benefited from higher net income in CSI Solar.

B Liquidity and Capital Resources

As of December 31, 2022, we had \$981.4 million in cash and cash equivalents and \$988.1 million in restricted cash. We intend to fund our existing and future material cash requirements with our cash and cash equivalents, anticipated cash flow from operations and credit facilities. We believe that our current cash and cash equivalents, anticipated cash flow from operations and existing credit facilities will be sufficient to meet our anticipated cash needs for at least the next 12 months, including our cash needs for working capital, ongoing capital expenditures, investment requirements, share repurchases, as well as debt repayments. Our long-term capital expenditures funding requirement may contemplate significant manufacturing expansion plans and investments to accelerate our product technology. We also expect to benefit from government grants, investment and tax incentives, and customer advances to increase the pace and scale of our growth plan. We may also from time to time seek to refinance our outstanding debt or retire or purchase our outstanding debt through cash purchases and exchanges for securities, in the open market purchases, privately negotiated transactions or otherwise. From time to time, we may make acquisitions of, or investments in, other companies and businesses that we believe could expand our business, augment our market coverage, enhance our technical capabilities, or otherwise offer growth opportunities. Such additional financing, refinancing, repurchases, exchanges, acquisitions, or investments, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions, and other factors. The amounts involved may be significant.

In 2020, we completed a RMB1.78 billion (approximately \$261.3 million on the date of transaction) capital raise for CSI Solar to qualify it for the planned carve-out IPO in China and bring in leading institutional investors and strategic partners. As a result, we received \$224.6 million of share purchase proceeds in 2020.

In 2021, we conducted an “at-the-market” offering program of common shares on Nasdaq, through which we sold 3,639,918 of our common shares and raised US\$150.0 million in gross proceeds before deducting commissions and offering expense.

On March 21, 2023, we announced the approval of the IPO of CSI Solar Co., Ltd. by China Securities Regulatory Commission on the Science and Technology Innovation Board (the “STAR Market”) of the Shanghai Stock Exchange (the SSE).

Our future cash flows and working capital needs will depend on many factors.

We intend to expand and upgrade our production capacity to meet expected growth in demand for our solar modules and remain competitive in production technology. We target to expand solar module, cell, solar wafer and ingot total annual production capacity to be 75.0 GW, 60.0 GW, 50.0 GW and 50.4 GW, respectively by March 2024, of which 50.0 GW, 50.0 GW, 35.0 GW and 20.4 GW, respectively, is targeted for December 2023. As we invest in these expansions and accelerate our high efficiency wafer and cell technology roadmap, we expect our near-term capital expenditures to be intensive compared to historical levels. The prepayment for future supply of raw materials and other components will continue to increase cash outflows in the near term. We made \$260.1 million and \$318.8 million of prepayments to certain suppliers as of December 31, 2021 and 2022, respectively, which might increase in amount if we encounter supply chain constraints or surges in price of raw material and transportation. To alleviate our working capital needs, we require some customers to make partial prepayments. With our growth, customer prepayments have increased from \$135.5 million to \$334.9 million as of December 31, 2021 and 2022, respectively.

Our energy business requires significant investment in project assets, solar power systems and investment in affiliates related to such assets. Furthermore, our focus on growing our base of recurring revenue from retained assets and our development pipeline of solar and battery storage projects is expected to require additional investments and working capital, until the projects reach commercial operations. The development time cycles of our solar power and battery storage project development can vary substantially and take many years. As a result, we may need to make significant upfront investments of resources before the collection of any proceeds from the sale or operation of these projects. These investments include payment of interconnection and other deposits, posting of letters of credit, and incurrence of construction, equipment, permitting, legal and other expenses. Our energy business may, however, need additional cash resources due to changed business conditions and other developments including unanticipated delays in regulatory approval, construction, grid energization and supply chain challenges. If our existing bank facilities to finance the acquisition, development and construction of these solar and battery storage projects are insufficient to satisfy our cash requirements, our energy business may need to seek additional equity or debt financing, or decrease its level of investments. We also rely on our partners’ capital if the projects are not wholly owned by us. Delays in completing the sale of any of our solar and battery storage projects could also impact our liquidity.

Cash Flows and Working Capital

As of February 28, 2023, we had contractual credit facilities of approximately \$3,570.4 million, of which approximately \$1,661.2 million has been drawn under borrowings and \$705.2 million has been drawn under arrangements with banks including bank guarantees, letters of credit and short-term notes payable, and approximately \$1,204.0 million was available for draw down upon demand.

In addition, as of February 28, 2023, we also had uncommitted credit facilities of approximately \$1,433.3 million, of which approximately \$544.6 million has been drawn under borrowings and \$447.9 million has been drawn under arrangements with banks including bank guarantees, letters of credit and short-term notes payable.

As of February 28, 2023, we had approximately short-term borrowings of \$1,102.2 million, non-recourse borrowings – current of \$361.3 million, long-term borrowings of \$714.2 million, and non-recourse borrowings of \$28.1 million. We enter into non-recourse financing that is designed to limit cross-default risk to us. Non-recourse debt used to finance solar projects was approximately \$389.5 million as of February 28, 2023.

The long-term borrowings will mature during the period from the first quarter of 2024 to the first quarter of 2037. The long-term borrowings on project assets – current, have maturity dates ranging from the third quarter of 2024 to the first quarter of 2039, which are reclassified as current liabilities because these borrowings are associated with certain solar and battery storage projects that are expected to be sold in 2023. Our long-term borrowings bear a weighted average interest rate of 4.53% as of February 28, 2023.

The short-term borrowings will mature during the period from the first quarter of 2023 to the first quarter of 2024. Our short-term borrowings bear a weighted average interest rate of 5.6% as of February 28, 2023. The credit facilities contain no specific extension terms but, historically, we have been able to obtain new short-term borrowings with similar terms before they mature.

In October 2016, we obtained a syndicated three-year loan facility of JPY9.6 billion (\$85.2 million) with Sumitomo Mitsui Banking Corporation (“SMBC”), acting as the lead arranger and 13 other participating financial institutions. The facility is unsecured and is guaranteed by us. The loan proceeds may be used to develop our solar project development pipeline in Japan and for general corporate working capital purposes. In October 2020, the facility agreement was renewed with 11 participating financial institutions led by SMBC at a term of two years and a facility amount of JPY9.1 billion (\$88.2 million). In September 2021, we further expanded the facility to JPY10.0 billion (\$89.9 million) for a term of three years, with a September 2024 maturity. In September 2022, the subsidiary amended the facility agreement to tranche 1 loan facility of JPY7.5 billion (\$57.2 million) guaranteed by us and tranche 2 loan facility of JPY2.5 billion (\$19.1 million) is secured by a pledge of equity interest in CSIF. As of February 28, 2023, the loan was fully drawn.

In August 2019, Canadian Solar Manufacturing (Thailand) Co., Ltd. obtained a five-year syndicated credit facility of \$188.0 million with the Siam Commercial Bank Public Company Limited (“SCB”), acting as the lead arranger and China Minsheng Banking Corporation Ltd, as one of the lenders. This facility is guaranteed by us. As of February 28, 2023, the facility was fully drawn to finance the construction of our solar cell and module manufacturing facilities in Thailand and the outstanding balance was \$34.6 million. Under the same facility agreement, we obtained a working capital facility of THB3.5 billion (\$106.7 million) from SCB to support the operations of our manufacturing company in Thailand. This facility is guaranteed by us and THB92.5 million (\$2.6 million) was drawn as of February 28, 2023.

In September and October 2019, we entered into two credit facilities with syndicated financial institutions led by Rabobank and Nomura Corporate Funding Americas, LLC. (“Nomura”), which agreed to provide financing of \$123.7 million and \$60.0 million, respectively. The proceeds from the credit facilities were available for purchasing solar modules and other eligible equipment. In August 2021, the Nomura loan was fully repaid. The outstanding balance as of February 28, 2023 was \$41.1 million and requires regularly scheduled repayment until September 2024. The outstanding credit facility is secured by the solar modules and project assets, and is guaranteed by us.

In August 2020, we executed a \$75.0 million development loan with Nomura Securities International, Inc. In November 2021, the syndicated facility was renewed with Nomura at an expanded amount of \$125.0 million that matures in November 2023. The outstanding credit facility is secured by certain project assets in the U.S. and Canada, and is guaranteed by us. As of February 28, 2023, the loan was fully drawn.

In September 2020, we completed an offering of \$230.0 million in aggregate principal amount of 2.50% convertible senior notes, or the Notes. We received net proceeds of approximately \$223.0 million from the offering, after deducting discounts, commissions and offering expenses. The Notes will mature on October 1, 2025.

In September 2020, we obtained a syndicated five-year non-recourse facility of AUD 289.4 million (\$206.0 million) with Australia and New Zealand Banking Group Limited, or ANZ, acting as the facility agent and three other financial institutions, to finance the construction of a portfolio of solar projects in Australia. The facility is secured by the project assets and was set to mature in 2025. The loan was assumed by a buyer in connection with the sale of the portfolio in 2022.

In November 2020, we established Japan Green Infrastructure Fund LP (“JGIF”), partnering with a business unit of Macquarie Group as a minority investor of JGIF and obtained a six-year mezzanine loan facility of JPY18.0 billion (\$174.2 million) with Madison Pacific Trust Limited acting as the facility agent and other four financial institutions. The facility is for the development and construction of solar power projects in Japan. In January 2023, we cancelled the unused commitment of JPY15.9 billion (\$122.2 million) under the facility agreement. As of February 28, 2023, the outstanding non-recourse balance was \$15.4 million.

In February 2021, we obtained a syndicated project finance loan facility of JPY24.5 billion with Nomura Capital Investment Co., Ltd. acting as lead arranger and 5 other participating financial institutions (Societe Generale, The Shizuoka Bank, Shinhan Bank, ING Bank and OCBC) to construct our 100 MWp Azuma Kofuji project in Japan. The project finance loan is secured and will mature in November 2023. As of February 28, 2023, the outstanding non-recourse balance was \$143.6 million.

In March 2021, we issued JPY8.1 billion (\$73.2 million) of non-recourse green project bonds to construct a portfolio of projects in Japan. The project bonds are secured by project assets and will mature in 2039. As of February 28, 2023, the outstanding balance was \$31.4 million.

In March 2021, Summex Renovables, S.A. De C.V., our 51% owned subsidiary, obtained a \$60.0 million project finance loan facility with Sumitomo Mitsui Banking Corporation (“SMBC”). The facility has been partially drawn for the construction of the El Mayo project in Mexico. As of February 28, 2023, \$28.0 million was drawn. We have provided a guarantee on the outstanding balance through a letter of credit. The non-controlling interests of the subsidiary maintained its pro rata contribution through shareholder loans of \$39.9 million as of February 28, 2023.

In May 2021, we secured a €50.0 million (\$61.1 million) credit facility with Banco Santander, S.A. (“Santander”). The facility comprises of a term loan of €25.0 million and a revolving credit facility of €25.0 million and is guaranteed by us. The facility will mature in May 2024. As of February 28, 2023, the loan and the revolving credit facility outstanding balance was \$26.4 million.

In July 2021, we secured a BRL500.0 million (\$95.9 million) financing facility with BTG Pactual and Itaú BBA to support the equity contribution for the development and construction of our solar projects in Brazil. The facility is guaranteed by us and will mature in December 2023. As of February 28, 2023, the outstanding balance was \$88.7 million.

In September 2021, Canadian Solar Sunenergy (Jiaxing) Co. Ltd. entered into a RMB580 million (\$90.9 million) long term loan facility with Shanghai Pudong Development Bank. The loan facility is secured by certain property and plant, and is guaranteed by CSI Solar, and matures in November 2028. As of February 28, 2023, RMB386.6 million (\$55.6 million) was drawn.

In November 2021, we registered a €100.0 million (\$113.4 million) medium term note program on Spain’s alternative fixed-income market (“MARF”). Any payment under the notes will be guaranteed by us. In December 2021, we completed a €30.0 million (\$34.1 million) fixed rate notes issuance due on December 2026. In February 2023, we renewed this €100.0 million medium term note program.

In November 2021, we entered into a letter of credit facility of \$50.0 million with Itaú BBA to support the projects awarded and participating in PPA auctions in LATAM, to issue new guarantees for projects in LATAM and support for funding projects in Mexico. As of February 28, 2023, \$41.3 million was utilized.

Between 2021 and 2022, Canadian Solar Sunenergy (Baotou) Co., Ltd. entered into credit facilities in the aggregate of RMB880 million (\$126.4 million) with six banks. Credit facilities of RMB580 million (\$83.3 million) is guaranteed by CSI Solar, and the remaining RMB300 million (\$43.1 million) is secured by certain property, plant and equipment, and is guaranteed by Canadian Solar Manufacturing (Luoyang) Inc and CSI Solar. As of February 28, 2023, RMB654.1 million (\$94.1 million) was drawn.

In February 2022, we entered into a letter of credit facility of \$50.0 million with Credit Agricole to support our global project development. As of February 28, 2023, \$41.3 million was utilized.

In June 2022, we entered into a letter of credit facility with syndicated financial institutions led by Nomura Corporate Funding Americas, LLC and with issuing bank Coöperatieve Rabobank U.A., New York Branch pursuant to which the lenders provide letters of credit up to \$100.0 million to support our North American project development. As of February 28, 2023, \$24.9 million was utilized.

In November 2022, we entered into a \$50.0 million revolving credit facility with ING Bank, N.V., Singapore Branch. The facility is guaranteed by us and mature in November 2023. As of February 28, 2023, the loan was fully drawn.

Between 2021 and February 2023, CSI Cells (Yancheng) Co., Ltd. entered into credit facilities in the aggregate of RMB910 million (\$130.9 million) with various banks. The credit facilities facility of RMB710 million (\$102.1 million) is unsecured and is guaranteed by CSI Solar. The remaining RMB200 million (\$28.8 million) is secured by certain property, plant and equipment, and is guaranteed by CSI Solar. As of February 28, 2023, RMB581.6 million (\$83.7 million) was drawn.

Most of our long-term borrowings and credit facilities contain covenants, primarily interest and debt coverage ratios, loan to equity value of designated project ratios, debt to asset ratios, and minimum equity requirements. We are, and expect to remain, in compliance with these covenants.

We often offer credit terms to our customers ranging from 30 days up to 90 days with advance payments ranging from 5% to 20% of the sale prices. These advances from customers amounted to \$135.5 million and \$334.9 million as of December 31, 2021 and 2022, respectively. We have increased and may continue to increase our credit term sales to certain creditworthy customers after careful review of their credit standings and acceptance of export credit insurance primarily by Sinosure and PICC, or other risk mitigation channels such as local credit insurance or factoring.

The following table sets forth a summary of our cash flows for the periods indicated:

	For the year ended December 31,	
	2021	2022
	(in thousands of \$)	
Net cash provided by (used in) operating activities	(408,254)	916,631
Net cash used in investing activities	(429,570)	(630,488)
Net cash provided by financing activities	614,071	428,639
Net increase (decrease) in cash, cash equivalents and restricted cash	(205,433)	535,221
Cash, cash equivalents and restricted cash at the beginning of the year	1,639,715	1,434,282
Cash, cash equivalents and restricted cash at the end of the year	1,434,282	1,969,503

Operating Activities

Net cash provided by operating activities is net income adjusted for certain non-cash items and changes in assets and liabilities. In 2022, the cash provided by operating activities increased by \$1,324.9 million compared to 2021, contributed by higher net income, favorable non-cash adjustments, and improvement in working capital. In particular, we lowered our inventories relative to the scale of our module business towards the end of 2022 in anticipation of a decline in raw material costs and improvement in shipping transit times.

Investing Activities

Net cash used in investing activities consists primarily of capital expenditures and investments in affiliates. Our capital expenditure was \$627.1 million in 2022 compared to \$428.7 million in 2021, as we executed our plan to increase manufacturing capacity and vertical integration. Our investments in affiliates were \$19.4 million in 2022 compared to \$54.0 million in 2021. In 2021, we invested to own a 20.0% equity stake in the Crimson battery storage project in California.

Financing Activities

Net cash provided by financing activities was \$428.6 million in 2022 compared to \$614.1 million in 2021. In 2021, we raised \$148.5 million net proceeds from issuance of common shares in connection with our at-the-market equity offering program. In 2022, we increased our financing cash flows from short-term and long-term borrowings by an aggregate of \$462.3 million. In comparison, our total borrowings on consolidated balance sheet increased by \$140.7 million from \$2,116.5 million in 2021 to \$2,257.2 million in 2022 as the increase in financing cash flows from borrowings was partially offset by the debt deconsolidation associated with our solar project sales throughout 2022.

For disclosures related to interest rates, refer to "Item 5. Operating and Financial Review and Prospects—A. Operating Results."

Material Cash Requirements

Our material cash requirements as of December 31, 2022 and any subsequent interim period primarily include our long-term and short-term borrowings obligations, purchase obligations, convertible notes obligation, operating and finance lease obligations, financing liability obligations, and interest obligations related to our borrowings, convertible notes and financing liability.

Our purchase obligations arise in the normal course of business, consisting of binding purchase orders for inventories and capital expenditures. As of December 31, 2022, our commitments for the purchase of inventories, primarily silicon raw materials, were \$5.0 billion, of which \$1.9 billion is expected to be paid in 2023. Our capital expenditures were primarily to maintain and increase our ingot, wafer, cell and module manufacturing capacity. We made capital expenditures of \$428.7 million and \$627.1 million in 2021 and 2022, respectively. As of December 31, 2022, our commitments for the purchase of property, plant and equipment were \$300.3 million, of which \$267.8 million is expected to be paid in 2023. As of December 31, 2022, our commitments for the purchase of services for solar power system were \$56.1 million, of which \$50.6 million is expected to be paid in 2023.

As of December 31, 2022, we had \$813.4 million of long-term borrowings and \$1,443.8 million of short-term borrowings outstanding. Principal payments required on long-term borrowings outstanding as of December 31, 2022 are \$639.9 million in 2024, \$83.6 million in 2025, \$31.8 million in 2026, \$22.4 million in 2027 and \$35.7 million in 2028 and thereafter. Long-term borrowing may have fixed or variable interest rates. For long-term debt with variable-rate interest, we estimate the future interest payments based on projected market interest rates for various floating-rate benchmarks received from third parties. Interest payments expected to be paid on long-term borrowing outstanding at December 31, 2022 are \$41.4 million in 2023, \$28.4 million in 2024, \$5.8 million in 2025, \$3.9 million in 2026, \$2.9 million in 2027 and \$20.4 million in 2028 and thereafter. Interest payments expected to be paid on short-term debt outstanding at December 31, 2022 are \$47.8 million. The rising interest rate environment may materially affect our estimate of interest payments in the future.

As of December 31, 2022, we had convertible notes with principal amount of \$230.0 million outstanding, bearing an annual interest rate of 2.5%, which will mature on October 1, 2025. Assuming no conversion, interest payments required on convertible notes as of December 31, 2022 are \$5.8 million in each of 2023 and 2024, and \$5.5 million in 2025.

As of December 31, 2022, we had financing liability of \$49.1 million that is expected to be repaid in 2023. As of December 31, 2022, we had \$65.5 million of operating lease liabilities, of which \$10.8 million is expected to mature in 2023. As of December 31, 2022, we had \$30.4 million of finance lease liabilities, of which \$15.5 million is expected to mature in 2023. Our financing liabilities as of December 31, 2022 are expected to result in interest obligation of \$1.9 million to be paid in 2023.

In their normal course of business, our subsidiaries provide letters of credit through their banks for purposes including, but not limited to, guarantees for accounts payable, debt service reserves, capital reserves, construction completion and performance. Letters of credit provided by our subsidiaries as of December 31, 2022 were \$303.1 million.

Changes in the timing of increases in, or delays in the regulatory determinations, of tariffs, taxes and duties could affect the cash flows and results of operations of our businesses. We have been in the past, and may be in the future, subject to antidumping and countervailing duty rulings and orders. In particular, we have been subject to antidumping and countervailing duty rulings in the U.S., the EU and Canada and have, as a result, been party to lengthy proceedings related thereto. See “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings.” for further information.

We have contingent contractual obligations in the ordinary course of developing solar and battery storage projects. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—We have substantial indebtedness and may incur substantial additional indebtedness and increased cost of indebtedness in the future, which could adversely affect our financial health and our ability to generate sufficient cash to satisfy our outstanding and future debt obligations.” These obligations are designed to cover potential risks and only require payment if certain targets are not met or certain contingencies occur. The risks associated with these obligations include change of control, construction cost overruns, subsidiary default, political risk, tax and sale indemnities, energy delivery, sponsor support and liquidated damages. While we do not expect that we will be required to fund any material amounts under these contingent contractual obligations in future, many of the events which would give rise to such obligations are beyond our control. We can provide no assurance that we will be able to fund our obligations under these contingent contractual obligations if we are required to make substantial payments thereunder.

CSI Solar plans to primarily invest its proceeds from the STAR Listing in a range of capacity support and expansion projects. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Even if the STAR Listing is completed, we may not achieve the results contemplated by our business strategy (including with respect to use of proceeds from that offering). In addition, it is difficult to predict the effect of the proposed STAR Listing on our common shares.”

Restricted Net Assets

Our PRC subsidiaries are required under PRC laws and regulations to make appropriations from net income as determined under accounting principles generally accepted in the PRC, or PRC GAAP, to non-distributable reserves, which include a general reserve, staff welfare and bonus reserve. The general reserve is required to be made at not less than 10% of the profit after tax as determined under PRC GAAP. The boards of directors of our PRC subsidiaries determine the staff welfare and bonus reserves. The general reserves are used to offset future extraordinary losses. Our PRC subsidiaries may, upon a resolution of their boards of directors, convert their general reserves into capital. The staff welfare and bonus reserves are used for the collective welfare of the employees of the PRC subsidiaries. In addition to their general reserves, our PRC subsidiaries are required to obtain approval from the local government authorities prior to decreasing and distributing any registered share capital to their shareholders. Accordingly, both the appropriations to general reserve and the registered share capital of our PRC subsidiaries are considered as restricted net assets. These restricted net assets amounted to \$658.2 million as of December 31, 2022.

Our operations in China are subject to certain restrictions on the transfer and use of cash within our company. Transfers of cash between our PRC subsidiaries and the Canadian parent company are restricted to normal trade business payments and any further capital contribution from the Canadian parent company may only be made under China's existing foreign currency regulations. Foreign exchange transactions by our PRC subsidiaries under most capital accounts continue to be subject to significant foreign exchange controls and require the approval of or registration with PRC governmental authorities. In particular, if we finance our PRC subsidiaries by means of additional capital contributions, certain government authorities, including the Ministry of Commerce or its local counterparts, must approve these capital contributions. These limitations could affect the ability of our Chinese subsidiaries to obtain foreign exchange through equity financing.

As of December 31, 2022, all of the undistributed earnings of approximately \$592.7 million attributable to our PRC subsidiaries are considered to be indefinitely reinvested so that no provision of withholding taxes has been provided in our consolidated financial statements. Our PRC subsidiaries are required to make appropriations of at least 10% of net income, as determined under PRC GAAP, to a non-distributable general reserve. After making this appropriation, the balance of the undistributed earnings is distributable. Should our PRC subsidiaries subsequently distribute their distributable earnings, they are subject to applicable withholding taxes to the PRC State Administration of Tax.

C Research and Development

We conduct research and development activities in the following areas: i) ingot growth and wafering, ii) cells, iii) modules, iv) system performance analysis, v) energy solution products, vi) reliability testing and analysis and vii) battery storage products.

- Ingot growth and wafering is focused on developing advanced crystallization and sawing technologies to produce high quality mono wafers.
- Solar cell research is focused on developing new high efficiency solar cells and advanced solar cell processing technologies.
- Module development is focused on module innovations, developing new module designs and technologies for leading wattage, efficiency, reliability and system-level performance.
- System performance analysis provides system-level performance evaluation and LCOE and LCOS benchmarking for our various new products and innovations.
- Research and development on energy solution products is aimed at developing high quality inverters and battery storage systems for utility, commercial and residential applications.
- Changshu Photovoltaic Testing Laboratory ("CPTL") located in Changshu, China is a fully ISO17025 accredited testing facilities for conducting certification per IEC61215/61730/62804 standards as well as extensive reliability research on PV modules and components. Since 2010, the laboratory has been approved by VDE and CSA certification bodies under their data approval programs. The laboratory is engaged in research collaboration with leading research institutes to accelerate market penetration of incremental and rupture PV technologies, by allowing state-of-the-art reliability evaluation and performance characterization. The team focuses on enabling products with longer service lifetime and lower degradation rates, through the use of data science and extensive characterization platforms.

As of December 31, 2022, we had 223 employees engaged in research, product development and engineering.

Our research and development activities are generally focused on the following items:

- developing Czochralski ("CZ") mono pulling technologies compatible to 182 mm and 210 mm ingot size with competitive cost structure;
- developing novel diamond wire sawing technology compatible with 182 mm and 210 mm mono ingot;
- continuously improving the conversion efficiency of existing solar cells and reducing cost through process and material improvement and innovation;
- developing new cell structures and technologies for higher efficiencies and performance;
- continuously improving the wattage of existing solar modules and reducing cost through process and material improvement and innovation;
- developing new modules with improved design and assembly methods to have higher power output, module-level efficiency, reliability and system-level performance;

- designing and developing customized solar modules and products to meet customer requirements;
- designing and developing power electronics such as inverters;
- designing and developing battery storage systems;
- testing, data tracing and analysis for system-level performance and reliability for our various products and innovations;
- developing data-based accurate reliability models to guide future materials and design innovations and commercialize long lifetime and long degradation solar modules;
- establishing highly accelerated reliability testing and innovative characterization methods to fasten large scale commercialization of our product innovations.

In the future, we expect to focus on the following research and development initiatives that we believe will enhance our competitiveness. As we continue to move into the downstream energy business, we have strengthened the capabilities of our engineering staff and increased investment in the system areas.

- *Ingot and wafer.* We have developed CZ pulling technologies compatible with 182 mm and 210 mm ingot growth and related diamond wire sawing process for thin wafers. We have developed not only P-type mono wafers for PERC cells, but also N-type wafer for our HJT and TOPCon cell production. R&D activities in this area are focused on continuously improving the cost and quality performance of the mono wafers. We plan to reduce the thickness of P-type wafers from about 150 um to 140 um, N-type HJT wafers from about 150 um to 130 um or 110 um, and N-type TOPCon wafers from 140 um to 130 um. Additional R&D activities focus on consuming less energy and materials in the CZ pulling and diamond wire sawing, for instance, increasing the pulling speed, improving the success rate of seeding and neck growth in the CZ pulling, and reducing the diamond wire diameter while improving the A rate of diamond wire sawing.
- *High efficiency cells.* For current cell capacity, most of our mono PERC cells are based on 182 mm and 210 mm large size wafers. Our research and development efforts for existing products focus on improving the conversion efficiency of cells and reducing the cost to be more competitive in the industry. We have focused our research and development initiatives for new products on N-type HJT cell, TOPCon cell, and other technologies such as interdigitated back contact (“IBC”) cell. To explore the next generation technology beyond PERC, we invested in HJT and TOPCon technologies. The development of HJT cell technologies started in March 2021. We now offer one of the most efficient HJT cells in the market. We have launched HJT module products in mid 2022 for high-end roof-top application. We launched TOPCon products in late 2022, having achieved TOPCon module efficiency of 22.4%. We began mass production of TOPCon from the ingot to cell and module in February 2023. With these advanced technologies, we can significantly lower the LCOE on the system level and improve our products’ market competitiveness.
- *Competitive solar module products.* Our R&D team including the module R&D, processing, testing and reliability, makes our products highly competitive in the market. We pioneered the introduction and volume production of cells and modules using 182 mm and 210 mm wafers, with HiKu6 modules using 182 mm cells mass produced at the beginning of 2021 and HiKu7 modules using 210 mm cells mass produced in the first half of 2021. By the end of 2022, our HiKu7 PERC module has reached wattages of 670W, and the module efficiency of 21.57%. Through the optimization of design, process, quality control and testing methods, the annual degradation rate of our modules has been reduced significantly over the past ten years, enabling warranty conditions improvement from 0.7% per year to 0.45% per year for our reliability leading BiHiKu7 modules. Our main R&D activities at module level are the continuous improvement of module wattage, reliability, system-level performance and cost reduction. For new products, we successfully launched HJT cell based modules in 2022, and have been making significant progress on our development of 182 mm and 210 mm TOPCon cell based modules. We started mass production of 182 mm bifacial TOPCon modules in February 2023. In 2021, we launched lightweight modules for loading-limited roofs. In 2022, we developed a BIPV system with innovative metal roof and installation method and this system will enter the market in 2023. In the future, we may develop modules for seawater floating systems, IBC modules and PV systems integrated with roads.
- *Energy solution products.* Our energy solution products developed are mainly single-phase solar, three-phase solar and hybrid storage inverters, as well as battery storage systems for utility, commercial, residential applications, for both front and behind the meter applications. Our string inverter products will be certified and will be available broadly in many regions globally. We continue to advance our solar system kits which are ‘ready-to-install’, consisting of solar modules, inverters, racking system, battery storage and other accessories. These kits are deployed in significant markets globally.
- *Power electronic products.* Our power electronics products include a full range of inverters for mass production to cater to various applications. Our 5 product series or platforms include the residential 3-5 kW inverter, the residential 7-9 kW inverter, the lower-

voltage C&I 15-25 kW inverter, the mid-wattage C&I 40-60 kW inverter and the higher-wattage C&I 75-125 kW inverter. We started our R&D focus on the residential inverter application since 2017 and delivered our inverter product to the market in 2019. We built 3 GW of production lines in our Suzhou facility during 2021. To date, we have passed the CQC NB/732004, IEC 62109, IEC 61727, EN50549-1 and EN50549-2 certifications for part or all of our 5 product series. We have cumulatively shipped over 3 GW of Canadian Solar inverters by 2022.

- **Utility-scale battery storage products.** Our R&D on battery storage products includes energy storage battery pack and system products development, testing and certification. The design of the energy storage pack and system started in May 2021 and the final product, SolBank, have been deployed in July 2022. The SolBank system is our first utility-scale battery storage product, adopting advanced technologies of high energy density (201 kWh/m³) LFP batteries, liquid cooling, active balancing BMS and fire safety measures. The SolBank product has passed UL9540A, UL1973, UL9540 and UN38.3 certifications for North America, IEC 62619, IEC 63056, IEC 62477-1, IEC 60730-1, IEC/EN 60204-1 certifications for Europe, and GB/T 36276 certification for China. Our energy storage testing center has begun operation in August 2021, with battery cell, pack and system testing capabilities. The packing and system assembly production line operation is expected to start in mid 2023. A pilot plant has been constructed to make and test prismatic battery cells of 305Ah capacity.
- **Residential battery storage products.** Our EP Cube offerings comprise a flexible whole-home energy storage solution that includes the Smart Gateway, hybrid inverter and battery module. The solution is available in 9.9-, 13.3-, 16.6-, 19.9-kWh capacities, with scalability up to 119.9 kWh with six units connected in parallel. EP Cube provides reliable power backup, integrates a self-designed hybrid inverter and supports up to 16 Amp 4 MPPT connections to store electricity generated by a photovoltaic (PV) system. It automatically stores electricity from the grid during off-peak times through authorized settings. With a 24/7 monitoring function, it can detect outages and energize the home seamlessly when the power supply is disrupted.

D Trend Information

Other than as disclosed elsewhere in this annual report on Form 20-F, we are not aware of any trends, uncertainties, demands, commitments or events that are reasonably likely to have a material adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future operating results or financial conditions.

E Critical Accounting Estimates

Our significant accounting policies are set out in “Note 2. Summary of Principal Accounting Policies” to our consolidated financial statements included elsewhere in this annual report on Form 20-F, which have been prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amount of assets and liabilities, revenues and expenses and related disclosure of contingent assets and liabilities at the date of our audited consolidated financial statements. Actual results may differ from these estimates under different assumptions or conditions.

Critical accounting estimates are those that reflect significant judgments or uncertainties, and which could potentially result in materially different results under different assumptions and conditions. We have described below what we believe are our most critical accounting estimates.

We are not aware of any specific event or circumstance that would require updates to our estimates and judgments or require us to revise the carrying value of our assets or liabilities as of the date of issuance of this Form 20-F. These estimates may change as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions.

Revenue

We recognize our sales of solar and battery storage projects at a point in time when customers obtain control of the solar and battery storage projects. Our solar and battery storage projects are often held in separate legal entities or trusts which are formed for the special purpose of constructing the solar and battery storage projects, which we refer to as “project companies”. There is judgment used to determine whether deconsolidation of the project companies is appropriate upon transfer of equity interest to customers, and whether if revenue should be recognized upon deconsolidation and satisfaction of performance obligation.

Long-lived Assets, Project Assets and Solar Power Systems Impairment

Our solar power systems, property, plant and equipment are stated at cost less accumulated depreciation and identified impairment losses. We assess our solar power systems, property, plant and equipment for impairment whenever events or changes in circumstances

indicate that the carrying amount of such assets may not be recoverable, and these assessments require significant judgment and estimates in determining whether such events or changes have occurred. We consider factors such as asset group utilization, process technology, changes in machinery and equipment technology, temporary idling of capacity and the expected timing of placing this capacity back into production for the impairment on our property, plant and equipment. We examine a number of factors such as changes in environmental, permitting, capital cost, market pricing or regulatory conditions that may impact the solar power system assets.

We review project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable and consider a fully developed or constructed project commercially viable or recoverable if it is anticipated to be sold for a profit. Factors such as changes in environmental, permitting, grid interconnection, capital cost, market pricing or regulatory conditions, which may cause the costs of the project to increase or the selling price of the project to decrease, are considered when evaluating project assets for impairment.

We recognize impairment based upon planned change in equipment use, project or investment specific factors, history of losses and current economic conditions. In 2022, we recorded impairment loss of \$60.3 million, \$1.7 million and nil on our property, plant and equipment, project assets and solar power systems, respectively.

Income Taxes

We are subject to the income tax laws and regulations of the many jurisdictions in which we operate. These tax laws and regulations are complex and involve uncertainty and judgment on how to interpret and apply tax laws and regulations in determining the provision for income taxes for financial reporting purposes. In addition, the various jurisdictions may enact tax legislation that could significantly affect our ongoing operations. For example, tax authorities could impose rate changes along with additional corporate tax provisions that would disallow or tax perceived base erosion or profit shifting. We make these estimates and judgments primarily in the calculation of tax credits and the differences in the timing of recognition of revenue and expense for tax reporting and financial statement purposes, and the calculation of interest and penalties related to uncertain tax positions. Changes in these estimates and judgments may result in a material increase or decrease to our tax provision, which would be recorded in the period in which the change occurs. We must also assess the likelihood that we will be able to recover our deferred tax assets against future sources of taxable income and reduce the carrying amount of deferred tax assets by recording a valuation allowance if, based on all available evidence, it is more likely than not that all or a portion of such assets will not be realized. However, the ultimate realization of our deferred tax assets is subject to a number of variables, including our future profitability within relevant tax jurisdictions. Accordingly, our valuation allowances may increase or decrease in future periods. As of December 31, 2022, we believe valuation allowance of \$43.5 million is required. The valuation allowance is determined, in part, on our ability to utilize such tax benefits by either carrying back or forward based on the profitability within the relevant tax jurisdictions, including estimated tax profitability, tax planning and earnings repatriation in future periods.

Warranties

We provide warranties on the solar power products and balance of systems we sell against defects in materials, workmanship and performance degradation, which vary depending on the type of products. We also warrant our battery storage products for a specific amount of time against performance or manufacturing defects. We have established procedures to monitor the trend of warranty support, replacement and repair costs, historical claims experience, failure rates expectations from our quality review or other assumptions, and may revise our estimates as necessary. We have further determined our expected future product performance through quality and reliability testing and actual field operating performance. In 2022, we provided warranty provision of \$68.4 million. As of December 31, 2022, accrued warranty liability was \$76.7 million.

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

The following table sets forth information regarding our directors and executive officers as of the date of this annual report on Form 20-F.

Name	Age	Position/Title
Shawn (Xiaohua) Qu	59	Chairman of the Board, President and Chief Executive Officer
Harry E. Ruda	64	Independent Director
Andrew (Luen Cheung) Wong	65	Independent Director
Lap Tat Arthur Wong	63	Independent Director
Lauren C. Templeton	47	Independent Director
Leslie Li Hsien Chang	68	Independent Director
Karl E. Olsoni	65	Independent Director
Yan Zhuang	59	Director and President of CSI Solar
Huifeng Chang	57	Director and Chief Financial Officer
Jianyi Zhang	65	Senior Vice President, General Counsel and Chief Compliance Officer

Directors

Dr. Shawn (Xiaohua) Qu founded Canadian Solar Inc. in Guelph, Ontario, Canada in 2001 and has been the chairman and chief executive officer of our Company since then. Canadian Solar went public on the Nasdaq in 2006 and is one of the world's largest solar technology and renewable energy companies, with approximately 18,500 employees globally. We are a leading manufacturer of solar photovoltaic modules, provider of solar energy and battery storage solutions, and developer of utility-scale solar and battery storage projects with a geographically diversified pipeline in various stages of development. Over the past 22 years, our products and services have benefited thousands of customers in over 160 countries, and provided clean electricity to millions of households. Prior to founding Canadian Solar, Dr. Qu worked at ATS Automation Tooling Systems in Canada and its subsidiary Photowatt International in France. Before that, Dr. Qu was a Research Scientist at Ontario Hydro (now Ontario Power Generation). Dr. Qu received a BSc degree from Tsinghua University, an MSc degree in Physics from the University of Manitoba and a PhD degree in Materials Science from the University of Toronto. Dr. Qu continued working as a postdoctoral researcher at the University of Toronto, focusing on semiconductor optical devices and photovoltaic cells. Dr. Qu has been a fellow of Canadian Academy of Engineering since 2019.

Dr. Harry E. Ruda has served as an independent director of our company since July 2011. He is the Director of the Centre for Advanced Nanotechnology, the Stanley Meek Chair in Nanotechnology and Professor of Applied Science and Engineering at the University of Toronto, Canada. From 1982 to 1984, he developed one of the first theories for electron transport in selectively doped two-dimensional electron gas heterostructures, while working as an IBM post-doctoral fellow. From 1984 to 1989, he was a senior scientist at 3M Corporation, developing some of the first models for electronic transport and optical properties of wide bandgap II-VI semiconductors. Dr. Ruda joined the faculty of the University of Toronto in 1989 in the Materials Science and Engineering and Electrical and Computer Engineering Departments. His research interests focus on the fabrication and modeling of semiconductor nanostructures with applications in the fields of optoelectronics, energy and sensing. Dr. Ruda was one of the founders of a Canadian National Centre of Excellence in Photonics. He has served on the National Science and Engineering Council of Canada and on other government panels, including those of the Department of Energy, Environmental Protection Agency, National Science Foundation in the U.S. and the Royal Academy of Engineering and Engineering Physical Sciences Research Council in the United Kingdom. Dr. Ruda is a Fellow of the Royal Society of Canada, a Fellow of the Institute of Physics, a Fellow of the Institute of Nanotechnology, and a Fellow of the Canadian Academy of Engineering. He obtained his Ph.D. in semiconductor physics from the Massachusetts Institute of Technology in 1982.

Mr. Andrew (Luen Cheung) Wong has served as an independent director of our company since August 2014. He has also served as a director of Chubb Life Insurance Company Ltd. since 2008, and is an independent director and the vice-chairman of Huazhong In-vehicle Holdings Company Limited, which is listed in Hong Kong Stock Exchange. Previously, Mr. Wong served as a director and a member of the audit committee, nomination and remuneration committee of China CITIC Bank Corporation Limited, a company listed on The Stock Exchange of Hong Kong, between 2013 and 2018. Mr. Wong was the director of Intime Retail (Group) Co. Ltd., a company listed on The Stock Exchange of Hong Kong, between 2013 and 2014, and was the director and a member of audit committee, risk management committee, nomination and remuneration committee of China Minsheng Bank, a company listed on The Stock Exchange of Hong Kong, from 2006 to 2012. From 1982 to 2006, Mr. Wong held senior positions at the Royal Bank of Canada, the Union Bank of Switzerland, Citicorp International Limited, a merchant banking arm of Citibank, Hang Seng Bank Limited and DBS Bank Limited, Hong Kong. Mr. Wong was awarded the National Excellent Independent Director by the Shanghai Stock Exchange in 2010 and received the Medal of Honour (Hong Kong SAR) from the Hong Kong SAR Government in 2011. Mr. Wong obtained his Bachelor of Social Sciences (Honours) degree from the University of Hong Kong in 1980 and a Master of Philosophy degree from Hong Kong Buddhist College in 1982.

Mr. Lap Tat Arthur Wong has served as an independent director of our company since March 2019. Mr. Wong currently serves as an independent director and chair of the audit committee of the following companies: Daqo New Energy Corp. (NYSE: DQ) and Microvast Holdings, Inc. (NASDAQ: MVST). From November 2014 to February 2023, Mr. Wong served as an independent director and chair of the audit committee at China Maple Leaf Educational Systems Limited (HKSE: 1317). From March 2020 to March 2022, Mr. Wong also served as an independent director at Tarena International, Inc. (NASDAQ: TEDU). From 2008 to 2018, Mr. Wong served as the Chief Financial Officer of Asia New Energy Holdings Pte. Ltd, Nobao Renewable Energy Holding Ltd., GreenTree Inns Hotel Management Group, Inc. and Beijing Radio Cultural Transmission Company Limited, sequentially. From 1982 to 2008, Mr. Wong held various positions with Deloitte Touche Tohmatsu (Deloitte) in Hong Kong, San Jose and Beijing, with his last position as a partner in Deloitte's Beijing office. Mr. Wong received a Higher Diploma in Accountancy from Hong Kong Polytechnic University and a Bachelor of Science degree in Applied Economics from University of San Francisco. He is a member of the American Institute of Certified Public Accountants; a fellow of the Association of Chartered Certified Accountants; and a fellow of the Hong Kong Institute of Certified Public Accountants.

Ms. Lauren C. Templeton has served as an independent director of our company since January 2020. Ms. Templeton is the founder and President of Templeton & Phillips Capital Management, LLC, a global investing boutique located in Chattanooga, Tennessee. She is also an independent director and member of the audit committee of Fairfax Financial Holdings Limited, a financial holding company engaged in property and casualty insurance and reinsurance and associated investment management, and its publicly-traded subsidiary, Fairfax India Holdings Corporation. Ms. Templeton serves on a number of non-profit organizations, including serving as Chairperson of the Board of Trustees of the John Templeton Foundation. She is a member of the Templeton World Charities Foundation and the Templeton Religion Trust. She also serves on the Board of Overseers at the Atlas Economic Research Foundation. Ms. Templeton is the former President of the Southeastern Hedge Fund Association, based in Atlanta, Georgia. She is also the co-author of "Investing the Templeton Way: The Market Beating Strategies of Value Investing's Legendary Bargain Hunter", which has been translated into nine languages. Ms. Templeton holds a Bachelor of Arts Degree in Economics from the University of the South, Sewanee.

Mr. Leslie Li Hsien Chang has been serving as an independent director of our company since September 2020 and has been serving as a director of CSI Solar since December 2020. Mr. Chang is currently an independent nonexecutive director, chairman of the audit committee, and a member of the remuneration committee and nomination committee of Huzhou Gas Company Limited (HKSE: 6661). Mr. Chang has been serving as Senior Advisor to CITIC Capital (Holdings) Limited since 2014. Prior to that, Mr. Chang served as a senior corporate executive and board director at several companies listed on the Hong Kong Stock Exchange. He joined CITIC Pacific limited (now known as CITIC Limited) as General Manager, Finance in 1994 and later became the Executive Director and Deputy Managing Director of the company responsible for the Group's financial management, accounting, and treasury functions. Mr. Chang also served as the Executive Director and Chief Executive Officer of HKC (Holdings) Limited; Executive Director and Vice Chairman of China Renewable Energy Investment Limited; Alternate Director on the board of Cathay Pacific Airways Limited and Independent Non-Executive Director of Pou Sheng International (Holdings) Limited, among other roles. Mr. Chang started his career after graduating from George Mason University business school in 1984 and joined the New York Office of KPMG. He became a partner of the firm specializing in the financial services industry and served as the Director of the Chinese Practice. Mr. Chang served as a certified public accountant in the State of New York and member of the American Institute of Certified Public Accountants, Chartered Global Management Accountants, and the Hong Kong Institute of Certified Public Accountants.

Mr. Karl E. Olsoni has been serving as an independent director of our company since June 2020 and was a strategic advisor to the Board of Directors between January 2020 and June 2020. Mr. Olsoni has more than 30 years of international energy sector experience. He has served as a director of the SDCL EDGE Acquisition Corporation (NYSE: SEDA), a publicly traded special purpose acquisition company focused on energy efficiency and decentralized energy solutions, since May 2022. He is currently an Operating Partner with Quinbrook Infrastructure Partners, an infrastructure fund manager investing in clean energy infrastructure in the United States, the United Kingdom and Australia. He is also a Partner with the kRoad group of companies which invest in battery storage, waste transformation and e-mobility. He previously served as Managing Director of the Clean Energy and Infrastructure team at Capital Dynamics where he and his partners raised and invested approximately \$1 billion in clean energy infrastructure projects. Mr. Olsoni was formerly Chief Financial Officer and Senior Vice President of PPM Energy Inc. (now Iberdrola Renewables/Avangrid), a US-based energy company, and Chief Financial Officer of Koch Materials, Inc., a unit of the Koch Industries, Inc. Before that, he spent 16 years with the Southern Company where, among other things, he was part of the original management team that built the Southern Company's independent power and merchant energy business (Southern Energy, Inc., later Mirant, Inc. and NRG Energy, Inc.) into one of the largest independent power producers in the world. Mr. Olsoni holds a Bachelor of Arts degree in Economics from George Washington University and an MBA from the College of William and Mary.

Mr. Yan Zhuang has been serving as a director of our company since September 2020. He is also the President of CSI Solar, and has been serving as a director of CSI Solar since September 2020. He has served various leadership roles, most recently as our president and chief operating officer, and previously as acting chief executive officer, senior vice president and chief commercial officer, senior vice president of global sales and marketing, and prior to that as our vice president of global sales and marketing. He was an independent director of our company from September 2007 to June 2009. Mr. Zhuang has worked in corporate branding, sales and marketing positions with, or provided consulting services to, a variety of multinational companies for over 20 years. In 2008, he founded and became a director of INS Research and Consulting. Mr. Zhuang was the head of Asia for Hands-on Mobile, Inc., a global media and entertainment company with operations in China, South Korea and India, from 2006 to 2007. He previously served as its senior vice president of business operations and marketing in Asia. Before joining Hands-on Mobile, Inc., he held various marketing and business operation positions with Motorola Inc., including as its Asia Pacific regional director of marketing planning and consumer insight. Mr. Zhuang holds a bachelor's degree in electrical engineering from Northern Jiaotong University, China, a Master of Science degree in applied statistics from the University of Alberta, Canada and a Master of Science degree in marketing management from the University of Guelph, Canada.

Dr. Hui Feng Chang has served as our senior vice president and chief financial officer since May 2016, and as a director of our company since September 2020. Mr. Chang is also an independent director, chair of the nominating committee, and a member of the audit and compensation committees of Scienjoy Holding Corporation (NASDAQ: SJ). He is also an independent director and a member of the audit committee of Denali Capital Acquisition Corp. (NASDAQ: DECAU). He has 19 years of experience in capital markets, financial investment and risk management. Before joining us, Dr. Chang was the co-head of Sales & Trading at the U.S. subsidiary of China International Capital Corp ("CICC") from 2010 to 2015. Prior to that, he was the CEO of CSOP Asset Management based in Hong Kong from early 2008 to 2010, investing funds from China in the international markets. From 2000 to 2008, Dr. Chang was vice president and an equity proprietary trader at Citigroup Equity Proprietary Investments in New York. Before going to New York, Dr. Chang worked at Kamakura Corp in Hawaii as a risk consultant to banks in Asia. He received a Ph.D. in soil physics and MBA from University of Hawaii in the early 1990s, M.S. degree from Academia Sinica in 1987 and B.S. degree from Nanjing Agricultural University in 1984.

Executive Officer

Mr. Jianyi Zhang joined us at the end of February 2016 as senior vice president and chief legal officer, and was appointed as chief compliance officer in May 2016 and as corporate secretary in November 2019. After graduation from Washington University School of Law, Mr. Zhang worked at Troutman Sanders LLP as an associate from June 1993 to September 1994. Thereafter, he formed a law firm Su & Zhang in Los Angeles, California. He rejoined Troutman Sanders LLP as an associate in April 1995, became a partner in September of 1999 and worked in that position until December 2001. From January 2002 to June 2005, Mr. Zhang worked at Walmart Stores, Inc. first as a senior corporate counsel II and then as senior assistant general counsel. From July 2005 to February 2016, he served, consecutively, as senior advisor to Chinese law firms of Jingtian & Gongcheng Law Firm, Runbo Law Firm, East Associates Law Firm and East & Concord Partners in Beijing. Mr. Jianyi Zhang received his B.A. degree and M.A. degree from the University of Helsinki, Finland in 1982 and 1983, respectively. After graduation from the University of Helsinki in 1983, Mr. Zhang worked at the Chinese Foreign Ministry until September 1989. Thereafter, he went to study at Washington University School of Law in St. Louis, Missouri and received his J.D. degree in 1992.

Duties of Directors

Under the OBCA, Canadian Solar Inc.'s directors are required to manage, or to supervise the management of, the business and affairs of our company. Pursuant to the OBCA, every director and officer of Canadian Solar Inc. in exercising his or her powers and discharging his or her duties to us shall act honestly and in good faith with a view to our best interests and shall exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances. A shareholder has the right to seek damages if a duty owed by our directors is breached.

The functions and powers of our board of directors include:

- convening shareholder meetings and reporting to shareholders at such meetings;
- declaring dividends and authorizing other distributions to shareholders;
- appointing officers and determining the term of office of officers;
- exercising the borrowing powers of our company and mortgaging the property of our company; and
- approving the issuance of shares.

Every director and officer of Canadian Solar Inc. has a duty to comply with the OBCA and the regulations made thereunder and with our articles and by-laws. No provision in a contract or in the articles or by-laws of Canadian Solar Inc. or a resolution of our board of directors relieves a director or officer from the duty to act in accordance with the OBCA and the regulations made thereunder or relieves him or her from liability for a breach thereof.

However, a director will not be liable for breaching his or her duty to act in accordance with the OBCA in certain circumstances if the director exercised the care, diligence and skill that a reasonably prudent person would have exercised in comparable circumstances, including reliance in good faith on:

- financial statements of our company represented to him or her by an officer of our company or in a written report of the auditor of our company to present fairly the financial position of our company in accordance with generally accepted accounting principles;
- an interim or other financial report of our company represented to him or her by an officer of our company to present fairly the financial position of our company in accordance with generally accepted accounting principles;
- a report or advice of an officer or employee of our company, where it is reasonable in the circumstances to rely on the report or advice; or
- a report of a lawyer, accountant, engineer, appraiser or other person whose profession lends credibility to a statement made by any such person.

B Compensation of Directors and Executive Officers

Cash Compensation

We paid our directors and executive officers aggregate cash remuneration, including salaries, bonuses and benefits in kind, of approximately \$8.2 million for 2022. Of this amount, we paid approximately \$0.4 million to our six independent directors and approximately \$7.8 million to our executive officers. The total amount set aside or accrued by us and our subsidiaries to provide pension, retirement or similar benefits for our directors and executive officers was approximately \$0.1 million in 2022.

Share Incentive Plan

In March 2006, we adopted a share incentive plan, or the Plan.

The purpose of the Plan is to promote the success and enhance the value of our company by linking the personal interests of the directors, employees and consultants to those of the shareholders and providing the directors, employees and consultants with an incentive for outstanding performance to generate superior returns to the shareholders. The Plan is also intended to motivate, attract and retain the services of the directors, employees and consultants upon whose judgment, interest and effort the successful conduct of our operations is largely dependent.

In September 2010, the shareholders approved an amendment to the Plan to increase the maximum number of common shares which may be issued pursuant to all awards of restricted shares, options and restricted share units under the Plan to the sum of (i) 2,330,000 plus (ii) the sum of (a) 1% of the number of our outstanding common shares on the first day of each of 2007, 2008 and 2009 and (b) 2.5% of our outstanding common shares on the first day of each calendar year after 2009. In June 2020, the shareholders approved an amendment to the Plan to extend the term of the Plan for a further ten-year period. As a result, the Plan will expire on, and no awards may be granted after June 30, 2029. As of January 31, 2023, the maximum number of common shares which may be issued pursuant to all awards of restricted shares, options and restricted share units under the Plan was 22,160,000 common shares, of which 566,190 restricted shares, 3,283,393 options, and 9,426,026 restricted share units (in each case net of forfeitures) have been awarded, leaving 8,884,391 common shares available to be issued.

The following describes the principal terms of the Plan.

Types of Awards. We may make the following types of awards under the Plan:

- restricted shares, which are common shares that are subject to certain restrictions and may be subject to risk of forfeiture or repurchase;
- options, which entitle the holder to purchase our common shares; and
- restricted share units, which entitle the holder to receive our common shares.

Plan Administration. The Compensation Committee of our board of directors administers the Plan, except with respect to awards made to our non-employee directors, where the entire board of directors administers the Plan. The Compensation Committee or the full board of directors, as appropriate, determines the provisions, terms, and conditions of each award.

Award Agreement. Awards are evidenced by an award agreement that sets forth the terms, conditions and limitations for each award.

Eligibility. We may grant awards to employees, directors and consultants of our company or any of our related entities, which include our subsidiaries and any entities in which we hold a substantial ownership interest. We may, however, grant options that are intended to qualify as incentive share options only to our employees.

Acceleration of Awards upon Corporate Transactions. Outstanding awards will accelerate upon a change-of-control where the successor entity does not assume our outstanding awards. In such event, each outstanding award will become fully vested and immediately exercisable, the transfer restrictions on the awards will be released and the repurchase or forfeiture rights will terminate immediately before the date of the change-of-control transaction.

Exercise Price and Term of Options. In general, the Compensation Committee determines the exercise price of an option and sets out the price in the award agreement. The exercise price may be a fixed or variable price related to the fair market value of our common shares. If we grant an incentive share option to an employee who, at the time of that grant, owns shares representing more than 10% of the voting power of all classes of our share capital, the exercise price cannot be less than 110% of the fair market value of our common shares on the date of that grant and the share option is exercisable for no more than five years from the date of that grant.

The term of an award may not exceed ten years from the date of the grant.

Vesting Schedule. In general, the Compensation Committee determines the vesting schedule.

Restricted Shares

The following table summarizes, as of January 31, 2023, the restricted shares that we had granted under the Plan to our employees and certain individuals as a group. We have not granted any restricted shares to our directors and executive officers. The restricted shares granted in May 2006 vested over a two-year period beginning in March 2006. The vesting periods for all other restricted shares are indicated in the notes below.

Name	Restricted Shares Granted	Restricted Shares Vested	Restricted Shares Forfeited	Date of Grant
Employees				
Twelve individuals as a group	330,860	330,860	—	May 30, 2006
Hanbing Zhang ⁽¹⁾	116,500 ⁽²⁾	116,500	—	July 28, 2006
Employees as a group	447,360	447,360	—	
Other Individuals				
One individual	2,330 ⁽³⁾	2,330	—	May 30, 2006
One individual	116,500 ⁽⁴⁾	116,500	—	June 30, 2006
Other Individuals as a group	118,830	118,830	—	
Total Restricted Shares	566,190	566,190	—	

(1) The wife of Dr. Shawn Qu.

(2) Vest over a four-year period from the date of grant.

(3) Vest on accelerated termination.

(4) Vest over a two-year period from the date of grant.

Options

The following table summarizes, as of January 31, 2023, the options that we had granted under the Plan to our directors and certain other individuals. The options granted to our independent directors vest immediately. Unless otherwise noted, all other options granted vest over a four-year period (one-quarter on each anniversary date) from the date of grant, and exercise prices are equal to the average of the trading prices of the common shares for the five trading days preceding the date of grant.

Name	Common Shares Underlying Options Granted	Common Shares Underlying Options Exercised	Common Shares Underlying Options Forfeited	Common Shares Underlying Options Outstanding	Exercise Price (\$ per Share)	Date of Grant	Date of Expiration
Directors:							
Shawn (Xiaohua) Qu	20,000	20,000	—	—	3.18	March 12, 2009	—
	25,000	25,000	—	—	11.33	August 27, 2010	—
	18,779	—	—	18,779	9.33	May 20, 2011	May 20, 2023
Harry E. Ruda	23,300 ⁽¹⁾	23,300	—	—	8.31 ⁽²⁾	August 14, 2011	—
	23,300 ⁽¹⁾	23,300	—	—	3.03 ⁽²⁾	June 11, 2012	—
	23,300 ⁽¹⁾	23,300	—	—	8.29 ⁽²⁾	June 7, 2013	—
Yan Zhuang	23,300 ⁽¹⁾	23,300	—	—	7.36	September 24, 2007	—
	23,300 ⁽¹⁾	—	23,300	—	41.75	June 26, 2008	—
	80,000	80,000	—	—	9.37	May 23, 2009	—
	15,000	15,000	—	—	11.33	August 27, 2010	—
	11,268	11,268	—	—	9.33	May 20, 2011	—
Directors as a Group	286,547	244,468	23,300	18,779			
Employees:							
Hanbing Zhang	46,600	46,600	—	—	4.29	July 28, 2006	—
	6,000	6,000	—	—	3.18	March 12, 2009	—
	12,000	12,000	—	—	11.33	August 27, 2010	—
	7,512	—	—	7,512	9.33	May 20, 2011	May 20, 2023
Other employees and certain individuals as a group	4,369,731	2,948,034	1,421,697	—	2.12 to 46.28	Various dates from May 30, 2006 to June 7, 2013	Various dates from May 29, 2016 to June 6, 2023
Total Options	4,728,390	3,257,102	1,444,997	26,291			

(1) Vest immediately upon the date of grant.

(2) Exercise price equal to the average of the trading prices of the common shares for the 20 trading days preceding the date of grant.

Restricted Share Units

The following table summarizes, as of January 31, 2023, the restricted share units that we had granted under the Plan to our directors, executive officers and certain other individuals.

Name	Restricted Share Units Granted	Restricted Share Units Vested	Restricted Share Units Forfeited	Date of Grant
Directors:				
Shawn (Xiaohua) Qu	6,154 ⁽¹⁾	6,154	—	May 8, 2011
	13,706 ⁽²⁾	13,706	—	May 20, 2011
	75,075 ⁽²⁾	75,075	—	March 16, 2012
	67,024 ⁽²⁾	67,024	—	March 9, 2013
	11,983 ⁽²⁾	11,983	—	May 4, 2014
	8,274 ⁽²⁾	8,274	—	May 3, 2015
	20,216 ⁽²⁾	20,216	—	July 8, 2016
	121,951 ⁽³⁾	121,951	—	November 6, 2016
	22,607 ⁽²⁾	22,607	—	May 17, 2017
	77,289 ⁽³⁾	77,289	—	November 5, 2017
	18,018 ⁽²⁾	18,018	—	May 13, 2018
	83,805 ⁽³⁾	83,805	—	November 10, 2018
	15,690 ⁽²⁾	11,767	—	May 13, 2019
	26,691 ⁽³⁾	26,691	—	November 9, 2019
	15,748 ⁽²⁾	7,874	—	May 23, 2020
	11,924 ⁽²⁾	2,981	—	August 22, 2020
	26,073 ⁽⁴⁾	26,073	—	December 30, 2020
	250,000 ⁽⁶⁾	—	—	September 22, 2020
	12,330 ⁽²⁾	—	—	May 23, 2022
	Hui Feng Chang	23,340 ⁽²⁾	23,340	—
13,477 ⁽²⁾		13,477	—	July 8, 2016
15,072 ⁽²⁾		15,072	—	May 17, 2017
12,012 ⁽²⁾		12,012	—	May 13, 2018
10,460 ⁽²⁾		7,845	—	May 13, 2019
3,923 ⁽¹⁾		3,923	—	May 13, 2019
10,499 ⁽²⁾		5,249	—	May 23, 2020
7,949 ⁽²⁾		1,987	—	August 22, 2020
130,000 ⁽⁶⁾		—	—	September 22, 2020
8,220 ⁽²⁾		—	—	May 23, 2022
Yan Zhuang	2,564 ⁽¹⁾	2,564	—	May 8, 2011
	8,224 ⁽²⁾	8,224	—	May 20, 2011
	45,045 ⁽²⁾	45,045	—	March 16, 2012
	40,214 ⁽²⁾	40,214	—	March 9, 2013
	7,988 ⁽²⁾	7,988	—	May 4, 2014
	5,516 ⁽²⁾	5,516	—	May 3, 2015
	13,477 ⁽²⁾	13,477	—	July 8, 2016
	15,072 ⁽²⁾	15,072	—	May 17, 2017
	12,012 ⁽²⁾	12,012	—	May 13, 2018
	10,460 ⁽²⁾	7,845	—	May 13, 2019
	5,230 ⁽¹⁾	5,230	—	May 13, 2019
	15,748 ⁽²⁾	7,874	—	May 23, 2020
11,924 ⁽²⁾	2,981	—	August 22, 2020	
130,000 ⁽⁶⁾	—	—	September 22, 2020	

Name	Restricted Share Units Granted	Restricted Share Units Vested	Restricted Share Units Forfeited	Date of Grant
Harry E. Ruda	1,020	1,020	—	July 1, 2014
	800	800	—	October 1, 2014
	1,274	1,274	—	January 1, 2015
	880	880	—	April 1, 2015
	993	993	—	July 1, 2015
	1,820	1,820	—	October 1, 2015
	1,033	1,033	—	January 1, 2016
	1,572	1,572	—	April 1, 2016
	2,051	2,051	—	July 1, 2016
	2,228	2,228	—	October 1, 2016
	2,411	2,411	—	January 1, 2017
	2,562	2,562	—	April 1, 2017
	1,901	1,901	—	July 1, 2017
	1,818	1,818	—	October 1, 2017
	1,767	1,767	—	January 1, 2018
	1,802	1,802	—	April 1, 2018
	2,458	2,458	—	July 1, 2018
	2,056	2,056	—	October 1, 2018
	2,096	2,096	—	January 1, 2019
	1,623	1,623	—	April 1, 2019
	1,381	1,381	—	July 1, 2019
	1,486	1,486	—	October 1, 2019
	1,361	1,361	—	January 1, 2020
	1,883	—	—	April 1, 2020
	1,587	—	—	July 1, 2020
	908	—	—	October 1, 2020
	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Andrew (Luen Cheung) Wong	610	610	—	August 7, 2014
	800	800	—	October 1, 2014
	1,274	1,274	—	January 1, 2015
	880	880	—	April 1, 2015
	993	993	—	July 1, 2015
	1,820	1,820	—	October 1, 2015
	1,033	1,033	—	January 1, 2016
	1,572	1,572	—	April 1, 2016
	2,051	2,051	—	July 1, 2016
	2,228	2,228	—	October 1, 2016
	2,411	2,411	—	January 1, 2017
	2,562	2,562	—	April 1, 2017
	1,901	1,901	—	July 1, 2017
	1,818	1,818	—	October 1, 2017
	1,767	1,767	—	January 1, 2018
	1,802	1,802	—	April 1, 2018
	2,458	2,458	—	July 1, 2018

	2,056	2,056	—	October 1, 2018
	2,096	2,096	—	January 1, 2019
	1,623	1,623	—	April 1, 2019
	1,381	1,381	—	July 1, 2019
	1,486	1,486	—	October 1, 2019
	1,361	1,361	—	January 1, 2020
	1,883	—	—	April 1, 2020
	1,587	—	—	July 1, 2020
	908	—	—	October 1, 2020
	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Lap Tat Arthur Wong	559	559	—	March 8, 2019
	1,623	1,623	—	April 1, 2019
	1,381	1,381	—	July 1, 2019
	1,486	1,486	—	October 1, 2019
	1,361	1,361	—	January 1, 2020
	1,883	—	—	April 1, 2020
	1,587	—	—	July 1, 2020
	908	—	—	October 1, 2020
	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Lauren C. Templeton	1,361	1,361	—	January 1, 2020
	1,883	—	—	April 1, 2020
	1,587	—	—	July 1, 2020
	908	—	—	October 1, 2020
	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Karl E. Olsoni	1,021	1,021	—	January 1, 2020
	1,412	—	—	April 1, 2020
	1,587	—	—	July 1, 2020
	908	—	—	October 1, 2020

	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Leslie Li Hsien Chang	908	—	—	October 1, 2020
	588	—	—	January 1, 2021
	639	—	—	April 1, 2021
	20,000 ⁽⁶⁾	—	—	September 22, 2020
	693	—	—	July 1, 2021
	883	—	—	October 1, 2021
	969	—	—	January 1, 2022
	843	—	—	April 1, 2022
	942	—	—	July 1, 2022
	796	—	—	October 1, 2022
	989	—	—	January 1, 2023
Directors as a group	1,714,531	943,603	—	

Name	Restricted Share Units Granted	Restricted Share Units Vested	Restricted Share Units Forfeited	Date of Grant
Executive Officer				
Jianyi Zhang	25,934 ⁽²⁾	25,934	—	May 8, 2016
	13,477 ⁽²⁾	13,477	—	July 8, 2016
	15,072 ⁽²⁾	15,072	—	May 17, 2017
	12,012 ⁽²⁾	12,012	—	May 13, 2018
	10,460 ⁽²⁾	7,845	—	May 13, 2019
	10,499 ⁽²⁾	5,249	—	May 23, 2020
	7,949 ⁽²⁾	1,987	—	August 22, 2020
	120,000 ⁽⁶⁾	—	—	September 22, 2020
	8,220 ⁽²⁾	—	—	May 23, 2022
Executive Officer	223,623	81,576	—	

Name	Restricted Share Units Granted	Restricted Share Units Vested	Restricted Share Units Forfeited	Date of Grant
Employees				
Hanbing Zhang	1,538 ⁽¹⁾	1,538	—	May 8, 2011
	5,482 ⁽²⁾	5,482	—	May 20, 2011
	21,021 ⁽²⁾	21,021	—	March 16, 2012
	18,767 ⁽²⁾	18,767	—	March 9, 2013
	2,796 ⁽²⁾	2,796	—	May 4, 2014
	2,344 ⁽²⁾	2,344	—	May 3, 2015
	4,717 ⁽²⁾	4,717	—	July 8, 2016
	5,275 ⁽²⁾	5,275	—	May 17, 2017
	4,204 ⁽²⁾	4,204	—	May 13, 2018
	3,661 ⁽²⁾	2,746	—	May 13, 2019
	5,249 ⁽²⁾	2,624	—	May 23, 2020
	3,975 ⁽²⁾	993	—	August 22, 2020
	20,000 ⁽⁶⁾	—	—	September 22, 2020
Other employees and certain individuals as a group	8,766,263 ⁽⁵⁾	5,155,111	1,783,919	Various dates from May 8, 2011 to October 1, 2021
	422,867 ⁽⁷⁾	1,198	16,368	Various dates from March 13, 2022 to November 16, 2022
Total Restricted Share Units	11,226,313	6,253,995	1,800,287	

(1) Vest over a one-year period from the date of grant.

(2) Vest over a four-year period from the date of grant, except the August 22, 2020 grants which vest over a four-year period from May 1, 2021.

(3) Vest over an eight-quarter period from date of grant.

(4) Vest immediately upon the date of grant.

(5) 13,844 restricted share units granted on May 8, 2011 vested over one-year period from the date of grant. 126,036 restricted share units granted on August 11, 2013 vested immediately upon the date of grant. Vesting of 1,326,000 restricted share units granted on June 2, 2021 is contingent on the successful carve-out IPO of CSI Solar Co., Ltd (50% vesting on the IPO date, then 25% vesting each on the first and second anniversaries of the IPO). The other restricted share units granted vest over a four-year period from the date of grant.

(6) Vesting contingent on the successful carve-out IPO of CSI Solar Co., Ltd (50% vesting on the IPO date, then 25% vesting each on the first and second anniversaries of the IPO).

(7) Vesting of 205,000 restricted share units granted on October 25, 2022 is contingent on certain performance condition (50% vesting on achieving the performance condition, then 25% vesting each on the first and second anniversaries of the achievement). The other restricted share units granted vest over a four-year period from the date of grant.

We grant each of our independent directors restricted share units quarterly in advance on the first day of July, October, January and April in each year of service. The number of restricted share units granted quarterly is determined by dividing \$30,000 by the average of the closing price of our common shares on each of the five trading days preceding the date of the grant. Each restricted share unit will entitle those directors to receive one of our common shares upon vesting. These restricted share units vest on the earlier of the date that the director ceases to be a member of our board of directors for any reason and three years after the grant date. We agree to issue common shares to those directors as soon as practicable, and in any event within 60 days, after the granted restricted share units vested.

Deferred Compensation Plans

In 2021, we adopted two nonqualified deferred compensation plans for eligible employees, one plan for Global Energy business and the other for CSI Solar. The plans provide eligible employees and directors with an opportunity to defer a portion of their compensation to be held by us under two separate grantor trusts. Assets of the plans are held by an independent trustee for the sole

benefit of the participating employees. The amount of nil and \$0.7 million was contributed to the trustee in 2021 and 2022, respectively, and the plans are not subject to the requirements of Employee Retirement Income Security Act of 1974 (ERISA).

C Board Practices

In 2022, our board of directors held five (5) meetings and passed thirty two (32) resolutions by unanimous written consent.

Terms of Directors and Executive Officers

Our officers are appointed by and serve at the discretion of our board of directors. Our current directors have not been elected to serve for a specific term and, unless re-elected, hold office until the close of our next annual meeting of shareholders or until such time as their successors are elected or appointed.

Board Diversity

Board Diversity Matrix (As of February 28, 2023)				
Country of Principal Executive Offices:	Canada			
Foreign Private Issuer	Yes			
Disclosure Prohibited Under Home Country Law	No			
Total Number of Directors	9			
	Female	Male	Non-Binary	Did Not Disclose Gender
Part I: Gender Identity				
Directors	1	7	0	1
Part II: Demographic Background				
Underrepresented Individual in Home Country Jurisdiction	7			
LGBTQ+	0			
Did Not Disclose Demographic Background	2			

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee, a nominating and corporate governance committee, a technology committee and a sustainability committee.

Audit Committee

Our audit committee consists of Messrs. Lap Tat Arthur Wong, Olsoni and Dr. Ruda and is chaired by Mr. Lap Tat Arthur Wong. Mr. Lap Tat Arthur Wong qualifies as an “audit committee financial expert” as required by the SEC. Each of Messrs. Olsoni and Dr. Ruda is “financially literate” as required by the Nasdaq rules. Each of the members of our audit committee satisfies the “independence” requirements of the Nasdaq corporate governance rules. The audit committee oversees our accounting and financial reporting processes and the audits of the financial statements of our company.

The audit committee is responsible for, among other things:

- selecting our independent auditors and pre-approving all auditing and non-auditing services permitted to be performed by our independent auditors;
- reviewing with our independent auditors any audit problems or difficulties and management’s responses;
- reviewing and approving all proposed related-party transactions, as defined in Item 404 of Regulation S-K under the Securities Act;

- discussing the annual audited financial statements with management and our independent auditors;
- reviewing major issues as to the adequacy of our internal controls and any special audit steps adopted in light of material control deficiencies;
- annually reviewing and reassessing the adequacy of our audit committee charter;
- such other matters that are specifically delegated to our audit committee by our board of directors from time to time;
- meeting separately and periodically with management and our internal and independent auditors; and
- reporting regularly to the full board of directors.

In 2022, our audit committee held eleven (11) meetings and passed one (1) resolution by unanimous written consent.

Compensation Committee

Our compensation committee consists of Messrs. Ruda, Andrew (Luen Cheung) Wong and Ms. Templeton and is chaired by Mr. Andrew (Luen Cheung) Wong. Each of the members of our compensation committee satisfies the “independence” requirements of the Nasdaq corporate governance rules. The compensation committee assists the board in reviewing and approving the compensation structure for our directors and executive officers, including all forms of compensation to be provided to our directors and executive officers. Members of the compensation committee are not prohibited from direct involvement in determining their own compensation. Our chief executive officer may not be present at any committee meeting during which his compensation is deliberated. The compensation committee is responsible for, among other things:

- 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 and approving the compensation arrangements for our other executive officers and our directors; and
- overseeing and periodically reviewing the operation of our employee benefits plans, including bonus, incentive compensation, stock option, pension and welfare plans.

In 2022, our compensation committee held five (5) meetings and did not pass any resolutions by unanimous written consent.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee consists of Messrs. Andrew (Luen Cheung) Wong, Lap Tat Arthur Wong, Leslie Li Hsien Chang and Ms. Templeton and is chaired by Ms. Templeton. Each of the members of our nominating and corporate governance committee satisfies the “independence” requirements of the Nasdaq corporate governance rules. The nominating and corporate governance committee assists the board of directors in identifying 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 or re-election to the board, or for appointment to fill any vacancy;
- 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;
- identifying and recommending to the board the directors to serve as members of the board’s committees;
- advising the board periodically with respect to significant developments in the law and practice of corporate governance as well as our compliance with applicable laws and regulations, and making recommendations to the board on all matters of corporate governance and on any corrective action to be taken; and
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance.

In 2022, our nominating and corporate governance committee held twelve (12) meetings and passed one (1) resolution by unanimous written consent.

Technology Committee

Our technology committee consists of Dr. Harry E. Ruda and Dr. Shawn Qu and is chaired by Dr. Ruda. The technology committee advises and assists the board of directors and management on matters relating to technology and technological innovation and development as it relates to our solar power business. The technology committee is responsible for, among other things:

- reviewing, evaluating and advising the board of directors and management regarding the quality, scope, direction and effectiveness of our research and development programs and activities;
- reviewing, evaluating and advising the board of directors and management regarding our progress in achieving our research and development goals and objectives;
- reviewing, evaluating and making recommendations to the board of directors and management on our internal and external investments in science and technology;
- monitoring, identifying, evaluating and advising the board of directors and management regarding competing solar power technologies and new and emerging developments in solar power science and technology;
- reviewing, evaluating and advising the board of directors and our chief executive officer regarding the composition and quality of the research and development team; and
- providing general oversight of matters relating to the protection of our intellectual property.

In 2022, our technology committee held two (2) meetings and did not pass any resolutions by unanimous written consent.

Sustainability Committee

We established a sustainability committee at the board level in April 2021. Our sustainability committee consists of Messrs. Olsoni, Leslie Li Hsien Chang and Dr. Huiheng Chang and is chaired by Mr. Olsoni. The sustainability committee oversees management's ESG plans. The sustainability committee is responsible for, among other things:

- reviewing sustainability-related risks and opportunities associated with our strategy and business development;
- reviewing climate-related risks and opportunities;
- monitoring progress and advising on strategic measures related to the long-term sustainability of the firm;
- overseeing the progress and execution of our ESG plans; and
- meeting on a biannual basis to review our ESG plans;

In 2022, our sustainability committee held two (2) meetings and did not pass any resolutions by unanimous written consent.

Interested Transactions

The OBCA contains provisions that relate to a scenario where a director or officer of Canadian Solar Inc. is a party to a material contract or transaction or proposed material contract or transaction with our company, or is a director or an officer of, or has a material interest in, any person who is a party to a material contract or transaction or proposed material contract or transaction with our company, as summarized below.

A director or officer of Canadian Solar Inc. who is a party to a material contract or transaction or proposed material contract or transaction with our company, or is a director or an officer of, or has a material interest in, any person who is a party to a material contract or transaction or proposed material contract or transaction with our company, shall disclose in writing to Canadian Solar Inc. or request to have entered in the minutes of meetings of directors the nature and extent of his or her interest. In the case of a director, such disclosure shall be made (a) at the meeting at which a proposed contract or transaction is first considered; (b) if the director was not then interested in a proposed contract or transaction, at the first meeting after he or she becomes so interested; (c) if the director becomes interested after a contract is made or a transaction is entered into, at the first meeting after he or she becomes so interested; or (d) if a person who is interested in a contract or transaction later becomes a director, at the first meeting after he or she becomes a director. In the case of an officer who is not a director, such disclosure shall be made (a) forthwith after the officer becomes aware that the contract or transaction or proposed contract or transaction is to be considered or has been considered at a meeting of directors; (b) if the officer becomes interested after a contract is made or a transaction is entered into, forthwith after he or she becomes so interested; or (c) if a person who is interested in a contract or transaction later becomes an officer, forthwith after he or she becomes an officer. Where a director or officer of Canadian Solar Inc. is required to make such disclosure in respect of a material contract or transaction or proposed material contract or transaction that, in the ordinary course of our business, would not require approval by the directors or shareholders, the director or officer shall disclose in writing to Canadian Solar Inc. or request to have entered in the minutes of meetings of directors the nature and extent of his or her interest forthwith after the director or officer becomes aware of the contract or transaction or proposed contract or transaction. A general notice to the directors by a director or officer disclosing that he or she is a director or officer of or has a material interest in a person, or that there has been a material change in the director's or officer's interest in the person, and is to be regarded as interested in any contract made or any transaction entered into with that person, is sufficient disclosure of interest in relation to any such contract or transaction.

A director who is required to make such disclosure in respect of a material contract or transaction or proposed material contract or transaction shall not attend any part of a meeting of directors during which the contract or transaction is discussed and shall not vote on any resolution to approve the contract or transaction unless the contract or transaction is (a) one relating primarily to his or her remuneration as a director of our company or an affiliate; (b) one for indemnity or insurance under the OBCA; or (c) one with an affiliate of our company. If no quorum exists for the purpose of voting on a resolution to approve a contract or transaction only because a director is not permitted to be present at the meeting for such reason, the remaining directors shall be deemed to constitute a quorum for the purposes of voting on the resolution. Where all of the directors are required to make such disclosure in respect of a material contract or transaction or proposed material contract or transaction, the contract or transaction may be approved only by the shareholders.

Where a material contract is made or a material transaction is entered into between our company and a director or officer of Canadian Solar Inc., or between our company and another person of which a director or officer of Canadian Solar Inc. is a director or officer or in which he or she has a material interest, (a) the director or officer is not accountable to our company or our shareholders for any profit or gain realized from the contract or transaction; and (b) the contract or transaction is neither void nor voidable, by reason only of that relationship or by reason only that the director is present at or is counted to determine the presence of a quorum at the meeting of directors that authorized the contract or transaction, if the director or officer disclosed his or her interest in accordance with the OBCA, and the contract or transaction was reasonable and fair to our company at the time it was so approved.

A director or officer, acting honestly and in good faith, is not accountable to our company or to our shareholders for any profit or gain realized from any such contract or transaction by reason only of his or her holding the office of director or officer, and the contract or transaction, if it was reasonable and fair to our company at the time it was approved, is not by reason only of the director's or officer's interest therein void or voidable, where, (a) the contract or transaction is confirmed or approved by special resolution at a meeting of the shareholders duly called for that purpose; and the nature and extent of the director's or officer's interest in the contract or transaction are disclosed in reasonable detail in the notice calling the meeting or in the information circular required by the OBCA.

Subject to those exceptions, where a director or officer of Canadian Solar Inc. fails to disclose his or her interest in a material contract or transaction in accordance with the OBCA or otherwise fails to comply with the relevant provisions of the OBCA, Canadian Solar Inc. or a shareholder of Canadian Solar Inc. may apply to the court for an order setting aside the contract or transaction and directing that the director or officer account to Canadian Solar Inc. for any profit or gain realized and upon such application the court may so order or make such other order as it thinks fit.

In 2022, we did not enter into any interested transactions other than those described in this "Item 6. Directors, Senior Management and Employees" and "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions."

Remuneration and Borrowing

Our directors may determine the remuneration to be paid to them. The compensation committee will assist the directors in reviewing and approving the compensation structure for our directors.

Pursuant to the OBCA, Canadian Solar Inc.'s articles are deemed to state that our directors may, without authorization of the shareholders, (a) borrow money upon the credit of the corporation; (b) issue, reissue, sell or pledge debt obligations of the corporation; (c) give a guarantee on behalf of the corporation to secure performance of an obligation of any person; and (d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the corporation, owned or subsequently acquired, to secure any obligation of the corporation.

Qualification

Each of our independent directors is asked to hold common shares and/or restricted share units having a value which is at least five times the director's annual cash retainer and to satisfy this requirement before three years after he or she becomes a director.

Employment Agreements

We have entered into employment agreements with each of our executive officers.

All of the employment agreements with our executive officers are for an indefinite term. Under the employment agreements, we may terminate the employment of an executive officer at any time by giving written notice of termination to the executive officer. An executive officer may terminate his employment at any time by giving 30 days' written notice of termination to us.

If we terminate the employment of an executive officer for any reason other than cause or disability, or the executive officer terminates his employment for good reason, in both cases other than within 12 months after a change of control, (a) the unvested RSUs held by the executive officer immediately before the date of termination of the employment that would otherwise vest within 12 months after the date of termination of the employment will be deemed to have vested immediately before the date of termination of the employment; (b) the executive officer is entitled to receive his target bonus for the year in which the date of termination of the employment occurs; and (c) the executive officer is entitled to continue to receive his base salary and benefits for a period of six plus N months following the date of termination of the employment provided that he continues to comply with his confidentiality, inventions, non-competition, non-solicitation and assistance obligations described below. "N" is the number of years (including part years) that the executive officer was employed by us and our subsidiaries during the period beginning on January 1, 2007 and ending on the date of termination of the Employment but not exceeding 12.

If we terminate the employment of an executive officer for any reason other than cause or disability, or the executive officer terminates his employment for good reason, in both cases within 12 months after a change of control, (a) all unvested RSUs held by the executive officer immediately before the date of termination of the employment will be deemed to have vested immediately before the date of termination of the employment; (b) the executive officer is entitled to receive a lump sum amount equal to the sum of: (1) his target bonus for the year in which the date of termination of the employment occurs, (2) his annual base salary and (3) the estimated annual cost of his providing his benefits multiplied by a fraction, the numerator of which is 12 plus N and the denominator of which is 12.

Each executive officer has agreed: (a) not to disclose or use any of our confidential information, including trade secrets and information concerning our finances, employees, technology, processes, facilities, products, suppliers, customers and markets, except in the performance of his duties and responsibilities or as required pursuant to applicable law; (b) to disclose in confidence to us all inventions, designs and trade secrets which he may conceive, develop or reduce to practice during his employment and to assign all right, title and interest in them to us; (c) during and within one year after the termination of his employment, (1) not to communicate or have any other dealings with our customers or suppliers that would be likely to harm the business relationship between us and our suppliers; (2) not to provide services, whether as a director, officer, employee, independent contractor or otherwise, to a competitor; and (3) not to solicit, whether by offer of employment or otherwise, the services of any of our employees; and (d) at our request, to answer our requests for information about those aspects of our business and affairs in which he was involved and assist us in prosecuting or defending claims or responding to investigations or reviews by any regulatory authority or stock exchange in relation to events or occurrences that took place during the employment. "Competitor" is a person that, directly or indirectly, carries on business in any jurisdiction where we and our subsidiaries carry on business if that person or any subsidiary or division of that person generates more than 10% of its revenues from solar power products and services similar to those provided by the us and our subsidiaries.

Our compensation committee is required to approve the employment agreements entered into by us with our executive officers.

Director Agreements

We have entered into director agreements with our independent directors, pursuant to which we make payments in the form of an annual cash retainer, payable quarterly, and quarterly grants of restricted share units to our independent directors for their services. See "—B. Compensation of Directors and Executive Officers."

Indemnification of Directors and Officers

The OBCA contains provisions that relate to indemnification by Canadian Solar Inc. in favor of an individual who is a present or former director or officer or an individual who acts or has acted at our request as a director or officer, or an individual acting in a similar capacity, of another entity, as summarized below.

Canadian Solar Inc. may indemnify any individual who is a present or former director or officer or an individual who acts or has acted at our request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with us or other entity. Canadian Solar Inc. may advance money to such an individual for such costs, charges and expenses of a proceeding, but the individual shall repay the money and Canadian Solar Inc. shall not indemnify any such individual unless the individual acted honestly and in good faith with a view to our best interests or, as the case may be, to the best interests of the other entity for which the individual acted as a director or officer or in a similar capacity at our request. In addition, if the matter is a criminal or administrative action or proceeding that is enforced by a monetary penalty, Canadian Solar Inc. shall not indemnify such an individual under the OBCA unless the individual had reasonable grounds for believing that the individual's conduct was lawful.

Canadian Solar Inc. may, with the approval of a court, indemnify such an individual, or advance moneys to such an individual, in respect of an action by or on behalf of Canadian Solar Inc. or other entity to obtain a judgment in its favor, to which the individual is made a party because of the individual's association with Canadian Solar Inc. or other entity, against all costs, charges and expenses reasonably incurred by the individual in connection with such action, if the individual acted honestly and in good faith with a view to our best interests or, as the case may be, to the best interests of the other entity for which the individual acted as a director or officer or in a similar capacity at our request.

Any such individual is entitled to indemnity from Canadian Solar Inc. in respect of all costs, charges and expenses reasonably incurred by the individual in connection with the defence of any civil, criminal, administrative, investigative or other proceeding to which the individual is subject because of the individual's association with Canadian Solar Inc. or other entity, if the individual seeking an indemnity (a) was not judged by a court or other competent authority to have committed any fault or omitted to do anything that the individual ought to have done; (b) acted honestly and in good faith with a view to our best interests or, as the case may be, to the best interests of the other entity for which the individual acted as a director or officer or in a similar capacity at our request, and (c) if the matter is a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that the individual's conduct was lawful.

Under Canadian Solar Inc.'s by-laws, Canadian Solar Inc. shall indemnify our directors and officers and former directors and officers and such other individual who acts or acted at our request as a director or officer, or in a similar capacity, of another entity, to the greatest extent permitted by law.

We have entered into indemnity agreements with each of our directors agreeing to indemnify them, to the fullest extent permitted by law, against all liability, loss, harm damage cost or expense, reasonably incurred by the director in respect of any threatened, pending, ongoing or completed claim or civil, criminal, administrative, investigative or other action or proceeding made or commenced against him or in which he is or was involved by reason of the fact that he is or was a director of our company.

Our directors and officers are covered by directors' and officers' insurance policies.

D Employees

As of December 31, 2020, 2021 and 2022, we had 12,774, 13,535 and 18,423 full-time employees, respectively. The following table sets forth the number of our employees categorized by our areas of operations and as a percentage of our workforce as of December 31, 2022.

	As of December 31, 2022	
	Number of Employees	Percentage of Total
Manufacturing	16,031	87 %
General and administrative	1,089	6 %
Research and development	223	1 %
Sales and marketing	1,080	6 %
Total	18,423	100 %

As of December 31, 2022, we had 15,560 employees at our facilities in China, and 2,863 employees based in our facilities and offices in Canada, Japan, Australia, Singapore, Korea, Hong Kong, Taiwan, India, Indonesia, Israel, Thailand, Vietnam, Brazil, United Arab Emirates, South Africa, the Americas and the EU (which includes Germany, Italy, Netherlands, Poland and Spain) and the U.K. Our employees are not covered by any collective bargaining agreement. We consider our relations with our employees to be good. From time to time, we also employ or engage part-time employees or independent contractors to support our manufacturing, research and development and sales and marketing activities. We plan to hire additional employees as we expand.

Our culture has always been to put people first and treat everyone with dignity. We promote equity, diversity, and inclusion, as we believe a diverse workforce will enrich the human capital of our organization. Best practices are implemented locally in keeping with our global strategies across our operating operations, from manufacturing to sales and project development. We promote equity, diversity, and inclusion in all human capital management areas. Refer to “Item 4. Information on the Company—B. Business Overview—Environmental, Social and Governance Initiatives” for further details.

Continuous learning is the cornerstone of our human capital development strategy. Employees across all functions and levels of us are offered participation in the Canadian Solar education courses and programs, which is designed to support their career development through an extensive suite of resources including classroom training, e-learning, coaching, mentoring and on-the-job training. We partner with professional consultants such as Development Dimensions International (“DDI”) for establishing leadership standards and creating tailor-made development programs.

Training programs for junior positions are focused on developing technical and professional skills, including but not limited to areas such as project development, permitting, asset management, financing, sales management, order management and operations, supply chain management, marketing, technical services and support. This is complemented by specific training sessions designed to develop soft skills and nurture a culture of continuous self and mutual learning.

For more senior-level employees, our in-house training program is more targeted on developing leadership and managerial skills. The Leadership Foundation Program focuses on executive strategy, effective decision-making, coaching for peak performance, delegation, and other leadership skills. Global workshops on key business topics such as PPA and storage are organized to help our leaders continue to learn. We also selectively sponsor key talents to attend top MBA programs.

We regularly carry out global succession planning reviews to identify the high-potential talents and follow up with individual development plans for them. As demand for solar grows, our succession planning calls for a robust leadership development program. Initiatives such as the Business Leader Development Program, where we partner with prestigious universities to provide online lectures, webinars, and project assignments, meet this need by providing training and development opportunities for all different levels of leadership. We also have a Middle Manager Development Program and a Frontline Leadership Program, where we partner with Franklin Covey to deliver leadership, individual effectiveness, and business execution training to our business leaders.

We strive to create a culture of openness and transparency which values and promotes two-way communication between management and team members. Feedback is both encouraged and appreciated, as we consider it a key driver for employee engagement.

We consider the turnover rate a valuable metric to measure the effectiveness of our programs and to assist in developing new programs. Our employee turnover for 2021 and 2022 was 18% and 14%, respectively. We believe the combination of training and development programs, regular performance reviews, competitive compensation, redesign of our company culture to better inspire employees, and career growth and development opportunities have helped reduce voluntary turnover.

E Share Ownership

The following table sets forth information with respect to the beneficial ownership of our common shares as of January 31, 2023, the latest practicable date, by:

- each of our directors and executive officers; and
- each person known to us to own beneficially more than 5% of our common shares.

The calculations in the table below are based on the 64,635,716 common shares outstanding, as of January 31, 2023.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days from January 31, 2023, including through the vesting of any restricted share unit, the exercise of any option, warrant or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person.

	Shares Beneficially Owned ⁽¹⁾	
	Number	%
Directors and Executive Officers: ⁽²⁾		
Shawn (Xiaohua) Qu ⁽³⁾	13,740,090	21.3 %
Harry E. Ruda ⁽⁴⁾	29,657	*
Andrew (Luen Cheung) Wong ⁽⁵⁾	4,726	*
Lap Tat Arthur Wong ⁽⁶⁾	8,283	*
Lauren C. Templeton ⁽⁷⁾	3,242	*
Karl E. Olsoni ⁽⁸⁾	2,431	*
All Directors and Executive Officers as a Group	13,788,429	21.3 %
Principal Shareholders:		
BlackRock, Inc. ⁽⁹⁾	4,724,842	7.3 %

* The person beneficially owns less than 1% of our outstanding shares.

- (1) Beneficial ownership is determined in accordance with Rule 13d-3 of the General Rules and Regulations under the Exchange Act, and includes voting or investment power with respect to the securities.
- (2) The business address of our directors and executive officers is 545 Speedvale Avenue West, Guelph, Ontario, Canada N1K 1E6.
- (3) Comprises 13,713,799 common shares directly held by Dr. Shawn Qu and Hanbing Zhang, the wife of Dr. Shawn Qu, and 26,291 common shares issuable upon the exercise of options held by Dr. Shawn Qu and Ms. Zhang.
- (4) Comprises 27,774 common shares directly held by Dr. Harry E. Ruda and 1,883 shares issuable upon vesting of restricted share units held by Dr. Harry E. Ruda within 60 days from January 31, 2023.
- (5) Comprises 2,843 common shares directly held by Mr. Andrew (Luen Cheung) Wong and 1,883 shares issuable upon vesting of restricted share units held by Mr. Andrew (Luen Cheung) Wong within 60 days from January 31, 2023.
- (6) Comprises 6,400 common shares directly held by Mr. Lap Tat Arthur Wong and 1,883 shares issuable upon vesting of restricted share units held by Mr. Lap Tat Arthur Wong within 60 days from January 31, 2023.
- (7) Comprises 1,359 common shares directly held by Ms. Lauren C. Templeton and 1,883 shares issuable upon vesting of restricted share units held by Ms. Lauren C. Templeton within 60 days from January 31, 2023.
- (8) Comprises 1,019 common shares directly held by Mr. Karl E. Olsoni and 1,412 shares issuable upon vesting of restricted share units held by Mr. Karl E. Olsoni within 60 days from January 31, 2023.
- (9) Represents 4,724,842 common shares owned by BlackRock, Inc., as reported on Schedule 13G/A filed by BlackRock, Inc. on January 31, 2023. The percentage of beneficial ownership was calculated based on the total number of our common shares as of January 31, 2023. The principal business address of BlackRock, Inc. is 55 East 52nd Street, New York, NY 10055.

None of our shareholders have different voting rights from other shareholders as of the date of this annual report on Form 20-F. We are currently not aware that we are directly or indirectly owned or controlled by another corporation, by any foreign government or by any other natural or legal person severally or jointly and we are currently not aware of any arrangement that may, at a subsequent date, result in a change of control of our company.

F. Disclosure of A Registrant's Action to Recover Erroneously Awarded Compensation

Not applicable.

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

Guarantees and Loans

Dr. Shawn Qu did not guarantee loan facilities in 2022 and we do not intend to seek loan guarantees from Dr. Shawn Qu in the future. In 2020 and 2021, respectively, Dr. Shawn Qu fully guaranteed loan facilities from two Chinese banks in the amounts of RMB135 million (\$20.6 million) and RMB12 million (\$1.9 million). No amount was drawn down under the facilities as of December 31, 2020 and 2021.

We granted 26,073 restricted share units to Dr. Shawn Qu in 2020 on account of his having guaranteed these loan facilities. No grants on account of his having guaranteed these loan facilities were made in 2021 and 2022.

Sales and Purchase Contracts with Affiliates

In 2020, 2021 and 2022, we provided asset management service to CSIF, our 14.64% owned affiliate in Japan, in the amount JPY394.5 million (\$3.7 million), JPY829.1 million (\$7.5 million) and JPY545.1 million (\$4.2 million), respectively, and provided O&M service to CSIF in the amount of JPY805.0 million (\$7.6 million), JPY981.2 million (\$9.2 million) and JPY914.9 million (\$7.0 million), respectively.

In 2022, we sold modules to Salgueiro I Renewable Energy S.A., Salgueiro II Renewable Energy S.A. and Salgueiro III Renewable Energy S.A., each our 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$0.1 million, \$0.1 million and \$0.1 million, respectively. In 2021, we sold modules to these affiliates in the amounts of \$0.1 million, \$0.1 million and \$0.1 million, respectively. In 2020, we sold modules to these affiliates in the amounts of \$11.6 million, \$10.0 million and \$9.4 million, respectively.

In 2022, we sold modules to Francisco SA I Renewable Energy S.A., Francisco SA II Renewable Energy S.A. and Francisco SA III Renewable Energy S.A., each our 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$0.2 million, \$0.2 million and \$0.2 million, respectively. In 2021, we sold modules to these affiliates in the amounts of \$7.2 million, \$7.6 million and \$8.1 million, respectively.

In 2022, we sold modules to Lavras I Solar Renewable Energy S.A., our 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$0.2 million. In 2021, we sold modules to Lavras I Solar Renewable Energy S.A., Lavras II Solar Renewable Energy S.A., Lavras III Solar Renewable Energy S.A., Lavras IV Solar Renewable Energy S.A. and Lavras V Solar Renewable Energy S.A., each our 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$5.7 million, \$5.8 million, \$6.0 million, \$6.2 million and \$6.2 million, respectively.

In 2022, we provided battery storage solutions to Sonoran West Solar Holdings, LLC. and Sonoran West Solar Holdings 2, LLC, each our 20% owned affiliate in the United States held through RE Crimson Holdings LLC with the remaining 80% ownership by a Canadian infrastructure fund, in the amounts of \$207.7 million and \$159.7 million, respectively. In 2021, we provided battery storage solutions to these affiliates in the amounts of \$12.8 million and \$7.0 million, respectively.

In 2021 and 2022, we purchased raw materials from Yancheng Jiwa New Material Technology Co., Ltd., our 10.91% owned affiliate with the remaining 89.09% ownership by Chinese investors, in the amount of RMB10.8 million (\$1.7 million) and RMB34.8 million (\$5.2 million), respectively.

In 2021, we sold modules to Jaiba 3 Renewable Energy S.A., Jaiba 4 Renewable Energy S.A. and Jaiba 9 Renewable Energy S.A., each our 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$0.8 million, \$3.2 million and \$3.0 million, respectively. In 2020, we sold modules to these affiliates in the amounts of \$6.0 million, \$3.7 million and \$1.4 million, respectively.

In 2020 and 2021, we sold two and two solar power projects to CSIF in the amount of JPY888.0 million (\$8.4 million) and JPY30.6 billion (\$282.1 million), respectively, recorded in revenue.

In 2020 and 2021, we purchased raw materials from Luoyang Jiwa New Material Technology Co., Ltd., our 10.91% owned affiliate with the remaining 89.09% ownership by Chinese investors, in the amount of RMB31.4 million (\$4.5 million) and RMB19.4 million (\$3.0 million), respectively.

In 2020, we provided EPC services to Lavras Solar Holding S.A., our 20% owned affiliate in Brazil, in the amount of BRL5.1 million (\$1.0 million).

In December 2020, we fully disposed of our ownership of Suzhou iSilver Materials Co., Ltd. for cash and exchange of shares with an unrelated third party. From January 1, 2020 through the date of disposal, we purchased raw materials in the amount of RMB168.0 million (\$24.3 million) from this former affiliate.

In July 2020, we fully disposed of our ownership of Suzhou Kzone Equipment Technology Co., Ltd. for cash to an unrelated third party. From January 1, 2020 through the date of disposal, we purchased raw materials in the amount of RMB7.4 million (\$1.0 million) from this former affiliate.

Employment Agreements

See “Item 6. Directors, Senior Management and Employees—C. Board Practices—Employment Agreements.”

Share Incentive Plan

See “Item 6. Directors, Senior Management and Employees—B. Compensation of Directors and Executive Officers—Share Incentive Plan.”

C Interests of Experts and Counsel

Not applicable.

ITEM 8 FINANCIAL INFORMATION

A Consolidated Statements and Other Financial Information

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

Legal and Administrative Proceedings

Class Action Lawsuits

Canadian Solar Inc. and certain of our directors and executive officers were named as defendants in class action lawsuits in the U.S. and Canada alleging that our financial disclosures during 2009 and early 2010 were false or misleading and in violation of U.S. federal securities laws and Ontario securities laws, respectively. The lawsuits in the U.S. were consolidated into one class action, which was dismissed with prejudice by the district court in March 2013. The dismissal was subsequently affirmed by the circuit court in December 2013. In January 2015, the plaintiff in the class action lawsuit obtained an order for class certification in respect of certain claims for which he had obtained leave in September 2014 to assert the statutory cause of action for misrepresentation under the Ontario Securities Act, for certain negligent misrepresentation claims and for oppression remedy claims advanced under the *Canadian Business Corporations Act* (Canadian Solar Inc.’s governing corporate statute at the time). A settlement of the lawsuit in Canada was achieved and approved by the Ontario Superior Court of Justice on October 30, 2020. The settlement is no admission of liability or wrongdoing by us or any of the other defendants.

U.S. Antidumping, Countervailing Duty and Safeguard Proceedings

Solar 1

On October 17, 2012, the United States Department of Commerce, or USDOC, issued final affirmative determinations with respect to its antidumping and countervailing duty investigations on crystalline silicon photovoltaic, or CSPV, cells, whether or not incorporated into modules, from China. On November 30, 2012, the U.S. International Trade Commission, or USITC, determined that imports of CSPV cells had caused material injury to the U.S. CSPV industry. The USITC’s determination was subsequently affirmed by the U.S. Court of International Trade, or CIT, and the U.S. Court of Appeals for the Federal Circuit, or Federal Circuit.

As a result of these determinations, we were required to pay cash deposits on Chinese-origin CSPV cells imported into the U.S., whether or not incorporated into modules. The rates applicable to us were 13.94% (antidumping duty) and 15.24% (countervailing duty). We paid all the cash deposits due under these determinations. Several parties challenged the determinations of the USITC in appeals to the CIT. On August 7, 2015, the CIT sustained the USITC’s final determination and on January 22, 2018, the Federal Circuit upheld the CIT’s decision. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The rates at which duties will be assessed and payable are subject to administrative reviews.

The USDOC published the final results of the first administrative reviews in July 2015. As a result of these decisions, the duty rates applicable to us were revised to 9.67% (antidumping duty) and 20.94% (countervailing duty). The assessed rates were appealed to the CIT. The CIT affirmed the USDOC's countervailing duty rates, and no change was made to our countervailing duty rate. This decision by the CIT was not appealed to the Federal Circuit. The CIT likewise affirmed USDOC's antidumping duty rates, and no change was made to our antidumping duty rate. This decision by the CIT was, however, appealed to the Federal Circuit, which upheld the CIT's decision. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The USDOC published the final results of the second administrative reviews in June 2016 (antidumping duty) and July 2016 (countervailing duty). As a result of these decisions, the antidumping duty rate applicable to us was reduced to 8.52% (from 9.67%) and then to 3.96% (from 8.52%). Because we were not subject to the second administrative review of the countervailing duty order, our countervailing duty rate remained at 20.94%. The antidumping duty rates were appealed to the CIT. The CIT affirmed the USDOC's second antidumping duty rate. This decision by the CIT was appealed to the Federal Circuit, which in June 2020 reversed the CIT's decision, in part, and directed the USDOC to reconsider certain issues related to its final determination. The USDOC submitted its antidumping duty redetermination to the CIT in September 2021. In December 2021, the CIT sustained USDOC's antidumping duty redetermination. As a result, our antidumping duty rate was reduced to 0.00% (from 3.96%). There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the third administrative reviews in June 2017 (antidumping duty) and July 2017 (countervailing duty), and later amended in October 2017. As result of these decisions, the duty rates applicable to us were changed to 13.07% (from 8.52%) (antidumping duty) and 18.16% (from 20.94%) (countervailing duty). The assessed rates were appealed to the CIT. The CIT has twice remanded the antidumping duty appeal to the USDOC to consider adjustments to our rate. Pursuant to CIT's remand orders, the USDOC issued a redetermination. The antidumping duty rate applicable to us was reduced to 4.12% (from 13.07%) and then further to 3.19% (from 4.12%). In June 2020, the CIT issued its third opinion sustaining the USDOC's remand redetermination. Canadian Solar filed a motion for reconsideration with the CIT advocating for an even lower antidumping duty rate. In September 2020, the CIT granted our motion for reconsideration and remanded to USDOC for further consideration of our antidumping duty rate. The USDOC submitted its antidumping duty redetermination to the CIT in September 2021. In December 2021, the CIT sustained USDOC's antidumping duty redetermination. As a result, our antidumping duty rate was reduced to 0.00% (from 3.19%). There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final. The CIT has likewise twice remanded the countervailing duty appeal to the USDOC to consider adjustments to our rate. In August 2020, the CIT sustained USDOC's second remand redetermination. As a result, our countervailing duty rate was reduced to 7.36% (from 18.16%). There was no further appeal to the Federal Circuit of the USDOC's countervailing duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the fourth administrative reviews in July 2018 (both antidumping duty and countervailing duty), with the countervailing duty rate later amended in October 2018. Because we were not subject to the fourth administrative review of the antidumping duty order, our antidumping duty rate remained at 13.07%. In this review, the countervailing duty rate applicable to us was reduced to 11.59% (from 18.16%) for the broader Canadian Solar entity and 10.64% (from 18.16%) for Canadian Solar International Limited. The countervailing duty rates were appealed to the CIT. The CIT remanded the countervailing duty appeal to the USDOC to consider adjustments to our rate. Pursuant to the CIT's remand orders, the USDOC made a redetermination that reduced our countervailing duty rate to 5.02% (from 11.59%) for the broader Canadian Solar entity and 4.22% (from 10.64%) for Canadian Solar International Limited. We appealed the CIT decision to the Federal Circuit to contest USDOC's continued assessment of a countervailing duty rate related to the alleged electricity subsidy program. In January 2022, the Federal Circuit sustained the CIT's decision, and no change was made to our countervailing duty rate. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The USDOC published the final results of the fifth administrative reviews in July 2019 (antidumping duty) and August 2019 (countervailing duty). The antidumping duty rate applicable to us was lowered to 4.06% (from 13.07%). The countervailing duty rate applicable to us was reduced to 9.70% (from 11.59%). The countervailing duty final results were amended to correct ministerial errors in December 2019, but this amendment resulted in no change to our 9.70% rate. The countervailing duty and antidumping duty rates were appealed to the CIT. Pursuant to the CIT's remand order in the antidumping appeal, USDOC made a remand redetermination that reduced our antidumping duty rate to 3.30% (from 4.06%). In May 2021, the CIT sustained USDOC's antidumping duty redetermination. There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final. The CIT remanded the countervailing duty appeal to the USDOC to consider adjustments to our rate. Pursuant to the CIT's remand order in the countervailing duty appeal, USDOC made a remand redetermination that reduced our countervailing duty rate to 3.65% (from 9.70%). In May 2022, the CIT sustained USDOC's countervailing duty redetermination. There was no further appeal to the Federal Circuit of the USDOC's countervailing duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the sixth administrative reviews in October 2020 (antidumping duty) and December 2020 (countervailing duty). USDOC assessed an antidumping duty rate of 68.93% (from 13.07%). The antidumping duty final results were amended to correct ministerial errors in December 2020 and as a result, the antidumping duty rate applicable to us was raised to 95.50% (from 68.93%). USDOC assessed a countervailing duty rate of 12.67% (from 9.70%). The countervailing duty final results were amended to correct ministerial errors in April 2021 and, as a result, our countervailing duty rate was reduced to 11.97% (from 12.67%). The antidumping duty rates were appealed to the CIT. The CIT remanded the antidumping duty appeal to the USDOC to consider adjustments to our rate. Pursuant to the CIT's remand order, the USDOC made a redetermination that reduced our antidumping duty rate to 23.02% (from 95.50%). This decision by the CIT was appealed to the Federal Circuit in March 2023, and we are currently participating in the appeal at the Federal Circuit. We did not appeal USDOC's final results of its sixth administrative review of the countervailing duty order and, therefore, this decision is final and our countervailing duty rate is expected to remain at 11.97%.

The USDOC published the final results of the seventh administrative reviews in August 2021 (countervailing duty) and October 2021 (antidumping duty). The antidumping duty rate applicable to us was lowered to 0.00% (from 95.50%). The countervailing duty rate applicable to Canadian Solar International Limited ("CSIL") was raised to 19.28% (from 11.97%). USDOC did not change the rate of 11.97% for Canadian Solar Manufacturing (Changshu) Inc. and Canadian Solar Manufacturing (Luoyang) Inc. because the countervailing duty review was rescinded for both of these companies. We did not appeal USDOC's final results of its seventh administrative reviews and, therefore, these decisions are final. Our antidumping duty rate will remain at 0.00% and our countervailing duty rate is expected to remain at 19.28% for CSIL.

The USDOC published the final results of the eighth administrative reviews in June 2022 (antidumping duty) and July 2022 (countervailing duty). The USDOC determined that the Canadian Solar entities subject to the eighth antidumping duty administrative review had no shipments during the period of review and therefore, our antidumping duty rate (0.00%) will remain unchanged for our Solar 1 CSPV products. The antidumping duty final results were amended to correct ministerial errors in August 2022, but this amendment resulted in no change to USDOC's no shipment determination with respect to Canadian Solar. USDOC assessed a countervailing duty rate of 15.75% (from 19.28%). The countervailing duty final results were amended to correct ministerial errors in August 2022 and, as a result, our countervailing duty rate was raised to 15.87% (from 15.75%). We did not appeal USDOC's final results of its eighth administrative review of the countervailing duty order and, therefore, this decision is final and our countervailing duty rate is expected to remain at 15.87%.

The ninth and tenth antidumping duty and countervailing duty administrative reviews were initiated in February 2022 and February 2023 and are currently underway. The USDOC is currently scheduled to release the final results of the ninth antidumping and countervailing duty administrative reviews in May 2023, subject to potential extensions. We submitted no-shipment certifications in both the ninth and tenth administrative reviews. In its preliminary results, USDOC preliminarily determined that we had no shipments and stated its intent to rescind the review for us. Our countervailing duty rate, therefore, is expected to remain the same at 15.87%. USDOC will likely issue preliminary results of the tenth administrative reviews in late 2023 or early 2024.

Between 2017 and 2019, the USDOC and USITC conducted five-year sunset reviews and determined to continue the Solar 1 antidumping and countervailing duty orders. In March 2018, the USDOC published the results of its expedited first sunset reviews and concluded that revocation of the Solar 1 orders would likely lead to a continuation or recurrence of dumping and a countervailable subsidy. We did not participate in USDOC's first sunset review. We did, however, participate in the USITC's first sunset review and requested that the Solar 1 duties be revoked. The USITC issued an affirmative determination in March 2019 declining to revoke the Solar 1 orders and finding that such revocation would be likely to lead to a continuation or recurrence of material injury to the U.S. industry within a reasonably foreseeable time. As a result, the Solar 1 orders remain in effect.

Solar 2

On December 31, 2013, SolarWorld Industries America, Inc. filed a new trade action with the USDOC and the USITC accusing Chinese producers of certain CSPV modules of dumping their products into the U.S. and of receiving countervailable subsidies from the Chinese authorities. This trade action also alleged that Taiwanese producers of certain CSPV cells and modules dumped their products into the U.S. Excluded from these new actions were those Chinese-origin solar products covered by the Solar 1 orders described above. We were identified as one of a number of Chinese producers exporting the Solar 2 subject goods to the U.S. market.

"Chinese CSPV products subject to Solar 2 orders" refers to CSPV products manufactured in mainland China using non-Chinese (e.g., Taiwanese) CSPV cells and imported into the U.S. during the investigation or administrative review periods of Solar 2. "Taiwanese CSPV products subject to Solar 2 orders" refer to CSPV products manufactured outside of mainland China using Taiwanese CSPV cells and imported into the U.S. during the investigation or review periods of Solar 2.

On December 23, 2014, the USDOC issued final affirmative determinations with respect to its antidumping and countervailing duty investigation on these CSPV products. On January 21, 2015, the USITC determined that imports of these CSPV products had caused material injury to the U.S. CSPV industry. As a result of these determinations, we are required to pay cash deposits on these CSPV products, the rates of which applicable to our Chinese CSPV products were 30.06% (antidumping duty) and 38.43% (countervailing duty).

The USDOC's determination and the assessed countervailing duty rates were appealed to the CIT and the Federal Circuit. In March 2019, the Federal Circuit affirmed the CIT's decision confirming the USDOC's determination but reduced our countervailing duty rate to 33.58% (from 38.43%). There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The antidumping cash deposit rate applicable to our Taiwanese CSPV products subject to Solar 2 orders varied by solar cell producer. We paid all the cash deposits due under these determinations. There is no countervailing duty order on Taiwan Solar 2 products.

The rates at which duties will be assessed and payable are subject to administrative reviews.

The USDOC published the final results of the first administrative reviews in July 2017 (China and Taiwan antidumping duty orders) and September 2017 (China-only countervailing duty order). Because we were not subject to the first administrative reviews of the Solar 2 orders, our duty rates will remain at 30.06% (antidumping duty) and 33.58% (countervailing duty) for our Chinese CSPV products. Our antidumping duty rates for our Taiwanese CSPV products had ranged from 3.56% to 4.20%, until they were changed to 1.52% to 3.78% in June 2019.

The second administrative reviews for the Solar 2 China antidumping and countervailing duty orders were rescinded, meaning that there is no change in the Chinese antidumping and countervailing duty rates applicable to our Chinese CSPV products 30.06% (antidumping duty) and 33.58% (countervailing duty). The USDOC published the final results of the second administrative review for the Taiwan antidumping duty order (there is no countervailing duty order) in June 2018. The rate applicable to us is 1.33%. There is no ongoing litigation related to the Taiwan antidumping duty rate.

We were not subject to the third administrative reviews of the Chinese orders and, therefore, our duty rates remained unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for our Chinese CSPV products. The third administrative review of the Taiwan antidumping order concluded in mid-2019. The rate assessed to us was 4.39% (from 1.33%). There is no ongoing litigation related to the Taiwan antidumping duty rate.

The USDOC issued the fourth administrative reviews of the Solar 2 China antidumping duty and countervailing duty orders in late 2019. Our duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for our Chinese CSPV products. The rate assessed to us in the fourth administrative review of the Taiwan antidumping order was 2.57% (from 4.39%). The USDOC also found that certain Canadian Solar entities had no shipments during this period of this review.

The USDOC rescinded the fifth administrative reviews of the Solar 2 China antidumping and countervailing duty orders. Our duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for our Chinese CSPV products. The USDOC published the final results of the fifth administrative review of the Taiwan antidumping duty order in September 2021. The USDOC determined that the Canadian Solar entities subject to the fifth administrative review had no shipments during the period of review and therefore, our antidumping duty rates will remain unchanged for our Taiwanese CSPV products.

The USDOC did not initiate the sixth administrative reviews of the Solar 2 China antidumping and countervailing duty orders because no parties requested reviews. Our duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for our Chinese CSPV products. The USDOC published the final results of the sixth administrative review of the Taiwan antidumping duty order in March 2022. The USDOC determined that the Canadian Solar entities subject to the sixth administrative review had no shipments during the period of review and therefore, our antidumping duty rates will remain unchanged for our Taiwanese CSPV products.

The USDOC initiated the seventh administrative reviews of the Solar 2 China antidumping and countervailing duty orders in April 2022. The countervailing duty review was not initiated with respect to Canadian Solar and therefore, our countervailing duty rates (33.58%) will remain unchanged for our Solar 2 China CSPV products. The USDOC rescinded the seventh administrative review of the Solar 2 Taiwan antidumping duty order in October 2022 and therefore, our antidumping duty rates will remain unchanged for our Solar 2 Taiwan CSPV products. The USDOC initiated the seventh administrative review of the Solar 2 China antidumping duty order in April 2022 with respect to certain of the Canadian Solar entities. The USDOC rescinded the seventh administrative review of the Solar 2 China antidumping duty order in March 2023 with respect to the Canadian Solar entities and therefore, our antidumping duty rates will remain unchanged for our Solar 2 China CSPV products.

The USDOC initiated the eighth administrative review of the Solar 2 China antidumping duty order in April 2023 with respect to certain of the Canadian Solar entities. The USDOC will likely issue the preliminary results of the eighth administrative review in late

2023 or early 2024, subject to potential extensions. The USDOC did not initiate the eighth administrative review of the Solar 2 China countervailing duty order because no parties requested reviews and therefore, our countervailing duty rates (33.58%) will remain unchanged for our Solar 2 China CSPV products. The USDOC initiated the eighth administrative review of the Solar 2 Taiwan antidumping duty order in April 2023, however, the review was not initiated with respect to Canadian Solar and therefore, our antidumping duty rates will remain unchanged for our Taiwanese CSPV products.

In 2020, the USDOC and USITC conducted five-year sunset reviews and determined to continue the Solar 2 antidumping and countervailing duty orders. In May 2020, the USDOC published the results of its expedited first sunset reviews and concluded that revocation of the Solar 2 orders would likely lead to a continuation or recurrence of dumping and a countervailable subsidy. The USITC issued an affirmative determination on September 4, 2020, declining to revoke the Solar 2 orders and finding that such revocation would be likely to lead to a continuation or recurrence of material injury to the U.S. industry within a reasonably foreseeable time. As a result, the Solar 2 orders are expected to remain in effect through at least 2025.

Section 201

On May 17, 2017, following receipt of a petition from Suniva, Inc., which was later joined by SolarWorld Americas, Inc., the USITC instituted a safeguard investigation to determine whether there were increased imports of CSPV products in such quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing like or directly competitive products. On September 22, 2017, the USITC determined that CSPV products are being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industry.

On January 23, 2018, the President of the United States imposed a safeguard measure on imports of CSPV cells, whether or not partially or fully assembled into other products such as modules, consisting of (1) a tariff-rate quota for four years on imports of CSPV cells not partially or fully assembled into other products, with (a) an in-quota quantity of 2.5 gigawatts, and (b) a tariff rate applicable to over-quota CSPV cells of 30%, declining annually by five percentage points to 25% in the second year, 20% in the third year, and 15% in the fourth year; and (2) a 30% tariff for four years on CSPV modules, declining annually by five percentage points to 25% in the second year, 20% in the third year, and 15% in the fourth year. This safeguard measure, which became effective on February 7, 2018, applies to CSPV products imported from all countries, except for certain developing country members of the World Trade Organization.

On June 13, 2019 and following an abbreviated public comment period, the Office of the U.S. Trade Representative (or USTR) granted an exclusion from the safeguard measure for solar panels comprising solely bifacial solar cells (or bifacial solar panels). In October 2019, USTR determined to withdraw this exclusion. Invenery Renewables LLC (or Invenery) promptly contested USTR's withdrawal determination at the CIT and secured a temporary restraining order against USTR in November 2019. In December 2019, the CIT preliminarily enjoined USTR's withdrawal due to procedural deficiencies. USTR then sought and was granted a voluntary remand to reconsider its withdrawal determination for bifacial solar panels.

In early 2020, USTR conducted a renewed notice-and-comment process regarding the exclusion for bifacial solar panels from the safeguard measures. In April 2020, USTR again determined that the exclusion for bifacial solar panels should be withdrawn based on the findings of its second notice-and-comment process. Notwithstanding, in May 2020 the CIT denied without prejudice the United States' motion to dissolve the preliminary injunction and to resume the collection of the safeguard tariff on entries of bifacial modules. USTR appealed the CIT's interlocutory decision to the Federal Circuit in July 2020, but subsequently dismissed its appeal in January 2021. The United States continued to litigate the merits of USTR's April 2020 withdrawal of the bifacial exclusion before the CIT. On November 17, 2021, the CIT vacated USTR's April 2020 withdrawal in *Invenery Renewables LLC v. United States*. The CIT's judgment holding USTR's April 2020 withdrawal of the bifacial exclusion unlawful was not appealed to the Federal Circuit and, therefore, this decision is final.

In early 2020, the USITC conducted a midterm review of the safeguard order, issuing its monitoring report in February 2020. Additionally, in March 2020, at the request of the USTR, the USITC released a report regarding the probable economic effect on the domestic CSPV cell and module manufacturing industry of modifying the safeguard measure on CSPV products. The USITC found that increasing the tariff-rate quota (TRQ) on CSPV cells (an integral component of CSPV modules) would likely result in a substantial increase in U.S. module producers' production, capacity utilization, and employment.

The President must consider the USITC's views but is not required to follow them or to take any action in the safeguard midterm review. On October 10, 2020, President Trump issued Proclamation 10101 pertaining to the midterm review. Proclamation 10101 authorized the following: (1) the revocation of the bifacial module exclusion effective October 25, 2020; (2) the reduction of the safeguard tariff to 18% *ad valorem* (as opposed to 15% *ad valorem* as prescribed in the original safeguard measures) effective February 7, 2021; and (3) the delegation to USTR of the President's authority to ask the USITC to assess whether the safeguard measures should be extended. The President decided not to follow the USITC's recommendation to increase the TRQ applicable to CSPV cells.

Following the issuance of Proclamation 10101, Invenery and other plaintiffs (AES Distributed Energy, Inc., Clearway Energy Group LLC, EDF Renewables, Inc. (“EDF”), the Solar Energy Industries Association (“SEIA”)) sought to challenge the Proclamation and filed motions to amend their complaints with the CIT. The CIT ultimately denied plaintiffs’ motions and refused to extend the bifacial module exclusion beyond October 24, 2020 as a consequence of the Proclamation (as opposed to USTR’s withdrawals). Subsequently, on December 29, 2020, Invenery and another set of plaintiffs (SEIA, NextEra Energy, Inc., and EDF) commenced new and separate litigation once again challenging Proclamation 10101 in the CIT. This new complaint alleges that the President unlawfully terminated the bifacial module exclusion and revised the safeguard tariff, effective February 7, 2021, to be 18% ad valorem (as opposed to the originally announced 15% ad valorem).

On November 16, 2021, the CIT held in *Solar Energy Industries Association et al. v. United States (SEIA)* that the President acted outside of his statutory authority in issuing Proclamation 10101, and enjoined the Government from enforcing that proclamation. This judgment had the effect of reinstating the exclusion of bifacial modules from the safeguard tariffs and lowering the fourth year safeguard tariff to 15% ad valorem. On January 14, 2022, the Government filed a notice of appeal of SEIA to the Federal Circuit and the appeal remains ongoing. The Federal Circuit held oral argument on April 3, 2023, and the Federal Circuit’s decision is expected in mid to late 2023. In October 2022, Canadian Solar filed an appeal at the U.S. Court of International Trade (“CIT”) challenging U.S. Customs and Border Protection’s erroneous collection of certain Section 201 safeguard duties on bifacial panels pursuant to Proclamation 10101, which the CIT ruled “null and void” in SEIA. Canadian Solar’s appeal is stayed pending resolution of the SEIA appeal at the Federal Circuit.

In 2021, the USITC conducted an extension investigation of the safeguard measure, in response to petitions by representatives of the domestic industry. In December 2021, the USITC issued its determination and report finding that the safeguard order continues to be necessary to prevent or remedy the serious injury to the domestic industry, and that there is evidence that the domestic industry is making a positive adjustment to import competition. On February 4, 2022, President Biden issued a Proclamation extending the safeguard measure on U.S. imports of CSPV products for four years until February 6, 2026. The extended safeguard measure doubles the volume of the TRQ on imported CSPV cells to 5.0 gigawatts and maintains a tariff on imports of CSPV modules and above-quota CSPV cells, beginning at a rate of 14.75% ad valorem and declining annually by 0.25 percentage points to 14.50% in the sixth year, 14.25% in the seventh year, and 14.0% in the eighth year. The extended safeguard measure excludes bifacial panels.

CSPV cells and modules from Canada are no longer subject to the safeguard measure as of February 1, 2022 following the United States and Canada’s entrance into a memorandum of understanding to resolve a dispute under the U.S.-Mexico-Canada Agreement.

Canadian Antidumping and Countervailing Duties Expiry Review

On June 3, 2015, the Canada Border Services Agency (“CBSA”) released final determinations regarding the dumping and subsidization of solar modules and laminates originating from China. The CBSA determined that such goods were dumped and subsidized. The CBSA found Canadian Solar to be a “cooperative exporter” and, as such, ascertained a low (relative to other Chinese exporters) Canadian Solar-specific subsidies rate of RMB0.014 per Watt. On July 3, 2015 the Canadian International Trade Tribunal (“CITT”) determined that the Canadian industry was not negatively affected as a result of imported modules but was threatened with such negative impact. As a result of these findings, definitive duties were imposed on imports of Chinese solar modules into Canada starting on July 3, 2015. The CITT may initiate an expiry review pursuant to Subsection 76.03(3) of the Special Import Measures Act (“SIMA”) before the end of 5 years of its finding. If the CITT does not initiate such an expiry review pursuant to Subsection 76.03(3) of SIMA, the finding is deemed to have been rescinded as of the expiry of the five years.

On April 1, 2020, the CITT initiated the preliminary stage of the expiry review regarding the above finding. The expiry review was concluded on March 25, 2021. The CITT determined to continue its aforementioned finding to impose definitive duties on imports of Chinese solar modules and laminates into Canada. As a result, the Canadian Solar-specific subsidies rate of RMB0.014 per Watt remains unchanged. The subsidies rate applies for a period of five years. The CITT is required to conduct a further expiry review at the end of that period, being July 2, 2025. Such subsidies rate does not have a material negative effect upon our results of operations because we have module manufacturing capacity in Ontario and do not rely on Chinese solar modules to serve our Canadian business.

Dividend Policy

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

Our board of directors has complete discretion on whether to pay dividends, subject only to the requirements of the OBCA. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations, earnings, capital requirements, surplus, general financial condition, contractual restrictions, and other factors that our board of directors may deem relevant.

B Significant Changes

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

Not applicable.

B Plan of Distribution

Not applicable.

C Markets

Our common shares have been listed on the Nasdaq since November 9, 2006 under the symbol "CSIQ."

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 Articles

General

On July 29, 2022, Canadian Solar Inc. filed articles of continuance to change our jurisdiction from the provincial jurisdiction of the Province of British Columbia to the provincial jurisdiction of the Province of Ontario. As a result, Canadian Solar Inc. is governed by the OBCA, and its affairs are governed by its articles and by-laws. Canadian Solar Inc.'s Ontario corporation number is 1497760.

The following are summaries of certain of the material provisions of Canadian Solar Inc.'s articles and by-laws and the OBCA. This summary is not intended to be complete and is qualified in its entirety by reference to Canadian Solar Inc.'s articles, by-laws and the OBCA. The information set forth in Exhibit 2.2 to this Annual Report on Form 20-F is incorporated herein by reference.

Objects and Purposes of Our Company

Canadian Solar Inc.'s articles and by-laws do not contain any stated objects or purposes and do not place any limitations on the business that we may carry on. Pursuant to the OBCA, Canadian Solar Inc. has the capacity and the rights, powers and privileges of a natural person, and the capacity to carry on its business, conduct its affairs and exercise its powers in any jurisdiction outside Ontario to the extent that the laws of such jurisdiction permit.

Voting on Proposals, Arrangements, Contracts or Compensation by Directors

Other than as disclosed in “Item 6. Directors, Senior Management and Employees—C. Board Practices—Interested Transactions”, neither the OBCA nor our articles or by-laws restrict a director’s power to (a) vote on a proposal, arrangement or contract in which the director is materially interested or (b) to vote compensation to themselves or any other members of their body in accordance with the OBCA.

Borrowing Powers of Directors

Pursuant to the OBCA, Canadian Solar Inc.’s articles are deemed to state that our directors may, without authorization of the shareholders, (a) borrow money upon the credit of the corporation; (b) issue, reissue, sell or pledge debt obligations of the corporation; (c) give a guarantee on behalf of the corporation to secure performance of an obligation of any person; and (d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the corporation, owned or subsequently acquired, to secure any obligation of the corporation.

Qualifications of Directors

Canadian Solar Inc.’s articles and by-laws do not contain any requirements for qualifications of directors.

Pursuant to the OBCA, the following persons are disqualified from being a director of Canadian Solar Inc.:

- A person who is less than eighteen years of age.
- A person who has been found under the *Substitute Decisions Act, 1992* or under the *Mental Health Act* to be incapable of managing property or who has been found to be incapable by a court in Canada or elsewhere.
- A person who is not an individual.
- A person who has the status of bankrupt.

Pursuant to the OBCA, a director of Canadian Solar Inc. ceases to be a director when:

- the term of office of the director expires, provided that a director not elected for an expressly stated term ceases to hold office at the close of the first annual meeting of shareholders following his or her election;
- the director dies;
- the director resigns as a director by notice in writing provided to us;
- the director is removed from office by an ordinary resolution of our shareholders; or
- the director becomes disqualified pursuant to the above criteria.

Common Share Rights

Dividends

Subject to the prior rights of the holders of the issued preferred shares, if any, the holders of the common shares are entitled to receive dividends declared by our board of directors. Pursuant to the OBCA, the board of directors shall not declare and Canadian Solar Inc. shall not pay a dividend if there are reasonable grounds for believing that (a) Canadian Solar Inc. is, or after the payment, would be unable to pay its liabilities as they become due; or (b) the realizable value of Canadian Solar Inc.’s assets would thereby be less than the aggregate of its liabilities, and its stated capital of all classes. All holders of common shares will share equally on a per share basis in any dividend declared by the board of directors on the common shares. The dividend entitlement time limit will be fixed by the board of directors at the time any such dividend is declared.

Voting Rights

The holders of common shares are entitled to receive notice of and to attend and vote at all meetings of our shareholders and each common share confers the right to one vote in person or by proxy at all meetings of our shareholders, except meetings at which the holders of the issued preferred shares, if any, are entitled to vote separately as a class or series. All directors stand for re-election annually.

Liquidation

Subject to the prior rights of the holders of the issued preferred shares, if any, the holders of the common shares are entitled to receive the remaining property of Canadian Solar Inc. in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of Canadian Solar Inc. among the shareholders for the purpose of winding up our affairs, whether voluntary or involuntary.

Other

The common shares are not convertible or redeemable and have no preemptive, subscription or conversion rights. In the event of a merger or consolidation, all common shareholders will be entitled to receive the same per share consideration. There are no provisions in our articles discriminating against any existing or prospective shareholder as a result of such shareholder owning a substantial number of our common shares. Our common shares are not subject to liability for further capital calls by our Company. Also, no provisions or rights exist in our articles regarding our common shares in connection with exchange, redemption, retraction, purchase for cancellation, surrender or sinking or purchase funds.

Preferred Share Rights

General

The preferred shares may include one or more series and, subject to the OBCA, our board of directors may issue one or more series of preferred shares at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series, including without limitation:

- (a) the issue price per share, which may be expressed in a foreign currency, provided that the issue price per share shall not be less than C\$1.00 (or its equivalent in a foreign currency at the date of issue) or more than C\$100.00 (or its equivalent in a foreign currency at the date of issue);
- (b) the rate, amount or method of calculation of dividends, including whether such rate, amount or method shall be subject to change or adjustment in the future;
- (c) the method of payment of dividends, including whether such dividends shall be cumulative, non-cumulative, partially cumulative, deferred or payable on some other basis;
- (d) the date or dates, manner and currency or currencies of payment of dividends;
- (e) the restrictions, if any, on the payments of dividends on any Junior Shares (defined below);
- (f) the rights and obligations, if any, that we have to redeem or purchase the shares, including the prices and other terms of redemption or purchase;
- (g) the terms of any share purchase plan or sinking or similar fund providing for the purchase or redemption of the shares;
- (h) the rights, if any, of the holders of the shares to retract the shares, including the prices and other terms of retraction;
- (i) the rights, if any, of the holders of the shares or of us to convert or exchange the shares for other securities of ours or any other entity and the rates and other terms of conversion or exchange;
- (j) the voting rights, if any, attached to the shares; and
- (k) the preferences, if any, of the shares over any Junior Shares with respect to the distribution of our assets in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of our property or assets among our shareholders for the purpose of winding up its affairs, whether voluntary or involuntary.

“Junior Shares” means the common shares and any other of our shares ranking junior to the preferred shares with respect to the payment of dividends and with respect to the distribution of assets in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of our property or assets among our shareholders for the purpose of winding up its affairs, whether voluntary or involuntary.

Voting Rights

Except where the rights, privileges, restrictions and conditions attaching to a series of our preferred shares otherwise provide, the holders of our preferred shares shall not be entitled as such to receive notice of, or to attend or vote at, a meeting of our shareholders. Except where the rights, privileges, restrictions and conditions attaching to a series of our preferred shares otherwise provide, on any poll taken at any meeting of the holders of preferred shares, whether as a class or a series or two or more series, each holder of preferred shares entitled to vote at the meeting shall have one one-hundredth of a vote in respect of each C\$1.00 (or its equivalent in a foreign currency at the date of issuance) of the issue price for each preferred share held. Except where the rights, privileges, restrictions and conditions attaching to a series of our preferred shares otherwise provide, the formalities to be observed with respect to the giving of notice of, and voting at, any meeting of holders of preferred shares, including without limitation, the quorum therefor, shall be those from time to time prescribed by our by-laws or by standing resolutions of our board of directors with respect to meetings of shareholders.

Creation of Additional Classes and Other Matters

Subject to the rights, privileges, restrictions and conditions attaching to a series of our preferred shares, we may, without the approval or consent of the holders of the preferred shares voting separately as a class or series, at any time and from time to time:

- (a) create one or more other classes of shares ranking on a parity with the preferred shares with respect to the payment of dividends or the distribution of assets in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of our property or assets among our shareholders for the purpose of winding up our affairs, whether voluntary or involuntary;
- (b) if all dividends on each outstanding series of preferred shares accrued to the most recently preceding date for the payment of dividends on such series shall have been declared and paid or set apart for payment, create one or more other classes of shares ranking superior to the preferred shares with respect to the payment of dividends or the distribution of assets in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of our property or assets among our shareholders for the purpose of winding up our affairs, whether voluntary or involuntary;
- (c) increase any maximum number of authorized shares of any other class of shares; and
- (d) effect an exchange, reclassification or cancellation of all or part of the preferred shares.

Liquidation

In the event of our liquidation, dissolution or winding-up, whether voluntary or involuntary, or in the event of any other distribution of our property or assets among our shareholders for the purpose of winding up our affairs, whether voluntary or involuntary, before any amount shall be paid to, or any property distributed among, the holders of our common shares, the holders of our preferred shares shall be entitled to receive:

- (a) the amount paid up on such shares or such other amount or amounts as have been provided for with respect to such shares;
- (b) the premium, if any, provided for with respect to such shares;
- (c) in the case of shares entitled to cumulative dividends, any unpaid cumulative dividends on such shares; and
- (d) in the case of shares entitled to non-cumulative dividends, any declared but unpaid non-cumulative dividends on such shares.

After payment of the amounts payable to them, the holders of our preferred shares shall not be entitled to share in any further distribution of our property and assets.

No Pre-Emptive Rights

The holders of our preferred shares shall not be entitled as such to subscribe for, purchase or receive any part of any issue of our securities, now or hereafter authorized, or any rights to acquire the same, otherwise than in accordance with any conversion, exchange or other rights which may from time to time be attached to any series of preferred shares.

Procedures to Change the Rights of Shareholders

Other than as disclosed in Item 10. Additional Information—B. Articles—“Preferred Share Rights”, Canadian Solar Inc.’s articles and by-laws do not provide for us to be able to change the rights of Canadian Solar Inc.’s shareholders.

The OBCA provides for certain avenues for the rights of Canadian Solar Inc.'s shareholders to be changed including:

- The directors may, by resolution, make, amend or repeal any by-laws that regulate our business or affairs, which may change the rights of our shareholders. Where the directors make, amend or repeal a by-law, they are required to submit the by-law, amendment or repeal to the shareholders at the next meeting of shareholders, and the shareholders may, by ordinary resolution, confirm, reject or amend the by-law, amendment or repeal. However the by-law, amendment or repeal is effective from the date of the resolution of the directors until it is confirmed, confirmed as amended or rejected by the shareholders or until the date of the meeting of shareholders at which it should have been submitted if it is not so submitted.
- Subject to the OBCA, we may from time to time if authorized by a special resolution of our shareholders (i.e., a resolution that is submitted to a special meeting of the shareholders duly called for the purpose of considering the resolution and passed, with or without amendment, at the meeting by at least two-thirds of the votes cast), amend Canadian Solar Inc.'s articles to add, change or remove any provision that is permitted by the OBCA to be, or that is, set out in its articles, including without limiting the generality of the foregoing, to:
 - change our name;
 - add, change or remove any restriction upon the business or businesses that we may carry on or upon the powers that we may exercise;
 - add, change or remove any maximum number of shares that we are authorized to issue or any maximum consideration for which any of our shares are authorized to be issued;
 - create new classes of shares;
 - change the designation of all or any of its shares, and add, change or remove any rights, privileges, restrictions and conditions, including rights to accrued dividends, in respect of all or any of its shares, whether issued or unissued;
 - change the shares of any class or series, whether issued or unissued, into a different number of shares of the same class or series or into the same or a different number of shares of other classes or series;
 - divide a class of shares, whether issued or unissued, into series and fix the number of shares in each series and the rights, privileges, restrictions and conditions thereof;
 - authorize the directors to divide any class of unissued shares into series and fix the number of shares in each series and the rights, privileges, restrictions and conditions thereof, or to revoke, diminish or enlarge any such authority;
 - authorize the directors to change the rights, privileges, restrictions and conditions attached to unissued shares of any series, or to revoke, diminish or enlarge any such authority;
 - subject to certain constraints, increase or decrease the number, or minimum or maximum number, of directors; and
 - add, change or remove restrictions on the issue, transfer or ownership of shares of any class or series.
- Where the directors are authorized by the articles to divide any class of unissued shares into series and determine the designation, rights, privileges, restrictions and conditions thereof, they may by resolution authorize the amendment of the articles to so provide.

Shareholder Meetings

Each director holds office until our next annual general meeting or until his or her office is earlier vacated in accordance with the provisions of the OBCA. A director appointed or elected to fill a vacancy on our board also holds office until our next annual general meeting.

Pursuant to the OBCA, we must hold an annual meeting of our shareholders at a time and place determined by our board of directors, provided that the meeting must not be held later than 15 months after the preceding annual meeting. Our directors may, whenever they think fit, call a special meeting of our shareholders. A meeting of our shareholders may be held by telephonic or electronic means and a shareholder who, through those means, votes at the meeting or establishes a communications link to the meeting shall be deemed for the purposes of the OBCA to be present at the meeting.

For the purpose of determining shareholders entitled to receive notice of a meeting of shareholders, the directors may fix in advance a date as the record date for such determination of shareholders, but the record date shall not precede by more than 60 days or by less than 30 days the date on which the meeting is to be held. Where no record date is fixed, the record date for the determination of shareholders entitled to receive notice of a meeting of shareholders shall be at the close of business on the day immediately preceding the day on which the notice is given, or if no notice is given, the day on which the meeting is held.

We must send notice of the date, time and location of any meeting of shareholders, in the manner provided in our by-laws and the OBCA, to each shareholder entitled to vote at the meeting and to each director and to our auditor not less than twenty-one days and not more than sixty days before the meeting. A notice of a meeting is not required to be sent to shareholders who were not registered on the records of our transfer agent on the record date, but failure to receive a notice does not deprive a shareholder of the right to vote at the meeting.

All business transacted at a special meeting of shareholders and all business transacted at an annual meeting of shareholders, except consideration of the minutes of an earlier meeting, the financial statements and auditor's report, election of directors and reappointment of the incumbent auditor, shall be deemed to be special business. Notice of a meeting of shareholders at which special business is to be transacted shall state or be accompanied by a statement of the nature of that business in sufficient detail to permit the shareholder to form a reasoned judgment thereon, and the text of any special resolution or by-law to be submitted to the meeting.

Unless otherwise required by the OBCA or the articles and by-laws of Canadian Solar Inc., (a) all questions proposed for the consideration of the shareholders shall be determined by the majority of the votes cast; (b) the chairman presiding at a meeting of shareholders may, with the consent of the meeting and subject to such conditions as the meeting decides, adjourn the meeting from time to time and from place to place subject to certain limits set out in the OBCA; and (c) the chairman or, in his absence, the present or, in their absence, a director designated by our board of directors shall act as chairman of each meeting of shareholders, but if no such officer is present within thirty minutes after the time appointed by the holding of the meeting, the persons present and entitled to vote at the meeting shall choose one of their number to be chairman of the meeting.

A shareholder and any other person entitled to attend a meeting of shareholders may in any manner and at any time waive notice of a meeting of shareholders, and attendance of any such person at a meeting of shareholders is a waiver of notice of the meeting, except where such person attends a meeting for the express purpose of objecting to the transaction of any business on the grounds that the meeting is not lawfully called. The only persons entitled to attend a meeting of shareholders shall be those entitled to vote thereat, our auditors and others who, although not entitled to vote, are entitled or required under any provision of the OBCA or the by-laws to be present at the meeting. Other persons may attend a meeting of shareholders only with the consent of the chairman of the meeting or the shareholders present, or deemed to be present, in person or by proxy at the meeting. Subject to the OBCA, any person entitled to attend a meeting of shareholders may participate in the meeting by means of a telephonic, electronic or other communication facility made available by us that permits all participants to communicate adequately with each other during the meeting. The persons participating in a meeting of shareholders by such means shall be deemed for the purposes of our by-laws to be present at the meeting. If our board of directors or shareholders call a meeting of shareholders pursuant to the OBCA, our board of directors or shareholders, as the case may be, may determine that the meeting shall be held, in accordance with the OBCA, entirely by means of a telephonic, electronic or other communication facility that permits all participants to communicate adequately with each other during the meeting.

A registered holder of shares entitled to vote or a beneficial owner of shares that are entitled to be voted at a meeting of shareholders may, submit to us notice of a proposal; and discuss at the meeting any matter in respect of which the registered holder or beneficial owner would have been entitled to submit a proposal. Subject to certain exceptions set out in the OBCA, where we receive notice of a proposal, (a) if we provide a management information circular, it shall set out the proposal in the management information circular or attach the proposal to that circular; (b) if we do not provide a management information circular, it shall set out the proposal in the notice of meeting for the shareholders' meeting at which the matter is proposed to be raised or shall attach the proposal to such notice of meeting; and (c) at the request of a person who submits notice of a proposal, we are required to include in the management information circular or the notice of meeting, as the case may be, or shall attach to it, the person's statement in support of the proposal and the person's name and address. The exceptions include if the notice of the proposal is not submitted to us within certain time restrictions set out in the OBCA, if it clearly appears that the primary purpose of the proposal is to enforce a personal claim or redress a personal grievance against us or our directors, officers or security holders, and if it clearly appears that the proposal does not relate in a significant way to our business or affairs. The proposal and the statement in support of it shall together not exceed 500 words. A proposal may include nominations for the election of directors if the proposal is signed by one or more holders of shares representing in the aggregate not less than five percent of the issued shares or five percent of the issued shares of a class or series of shares entitled to vote at the meeting to which the proposal is to be presented. This description of the provisions of the OBCA relating to shareholder proposals does not purport to be complete. For complete details, refer to the OBCA.

We are required to prepare a list of shareholders entitled to receive notice of a meeting, arranged in alphabetical order and showing the number of shares held by each shareholder, which list shall be prepared, if a record date is fixed, not later than ten days after such record date, or if no record date is fixed, at the close of business on the day immediately preceding the day on which notice is given, or where no notice is given, on the day on which the meeting is held. A shareholder whose name appears on such list is entitled to vote the shares shown opposite the shareholder's name at the meeting to which the list relates. A shareholder may examine the list of shareholders during usual business hours at our registered office or at the place where our central securities register is maintained, and at the meeting of shareholders for which the list was prepared.

A quorum for the transaction of business at any meeting of shareholders shall be two or more shareholders present, or deemed to be present, in person or by proxy at the meeting and together holding or representing by proxy shares carrying at least 33 1/3 percent of the votes entitled to be cast at the meeting. If a quorum is present at the opening of a meeting of shareholders, the shareholders present may, unless the by-laws otherwise provide, proceed with the business of the meeting even if a quorum is not present throughout the meeting. If a quorum is not present at the time appointed for a meeting of shareholders, or within such reasonable time thereafter as the shareholders present may determine, the shareholders present may adjourn the meeting to a fixed time and place but may not transact any other business.

Each of our common shares entitles the holder thereof to one vote at a meeting of shareholders. Where a body corporate or association is a shareholder, we will recognize any individual authorized by a resolution of the directors or governing body of the body corporate or association to represent it at meetings of our shareholders. Unless the by-laws otherwise provide, where two or more persons hold shares jointly, one of those holders present at a meeting of shareholders may in the absence of the others vote the shares, but if two or more of those persons are present, in person or by proxy, they shall vote as one on the shares jointly held by them.

At a meeting of shareholders, every motion shall, subject to the provisions of the OBCA, be decided by a show of hands, unless a ballot thereon is required by the chairman of the meeting or is demanded by any shareholder entitled to vote and present, or deemed to be present, in person or by proxy at the meeting. Upon a show of hands, every such person who is entitled to vote shall have one vote. Before or after a show of hands has been taken upon any motion, the chairman may require, or any shareholder entitled to vote and present, or deemed to be present, in person or by proxy at the meeting may demand a ballot thereon. Notwithstanding the foregoing, the vote on any motion may be held, subject to compliance with the OBCA, by means of a telephonic, electronic or other communication facility made available by us for such purpose. Unless a ballot thereon is demanded, a declaration by the chairman of the meeting that the vote upon a motion has been carried or carried by a particular majority or not carried shall be the decision of the shareholders upon the motion and an entry in the minutes of the meeting to the effect that the chairman of the meeting declared the motion to be carried or defeated is, in the absence of evidence to the contrary, proof of that fact without proof of the number or proportion of the votes recorded in favor of or against the motion. A demand for a ballot may be withdrawn at any time before the ballot is taken. If a ballot is required by the chairman of the meeting or is duly demanded by any shareholder entitled to vote and present, or deemed to be present, in person or by proxy at the meeting and the demand is not withdrawn, a ballot upon the motion shall be taken in such manner as the chairman of the meeting shall direct. Unless the OBCA or articles otherwise requires, upon a ballot, each shareholder who is present, or deemed to be present, in person or by proxy at the meeting shall be entitled to one vote for each share in respect of which he or she is entitled to vote at the meeting and the result of the ballot shall be the decision of the shareholders upon the motion.

Pursuant to the OBCA, the holders of not less than five percent of the issued shares of Canadian Solar Inc. that carry the right to vote at a meeting sought to be held may requisition the directors to call a meeting of shareholders for the purposes stated in the requisition. Upon receiving such a requisition, unless certain statutory exceptions apply the directors shall call a meeting of shareholders to transact the business stated in the requisition and if they do not do so within twenty-one days after receiving the requisition, any shareholder who signed the requisition may call the meeting. We are obligated to reimburse the shareholders for the expenses reasonably incurred by them in requisitioning, calling and holding the meeting unless the shareholders have not acted in good faith and in the interest of our shareholders generally.

If for any reason it is impracticable to call a meeting of our shareholders in the manner in which meetings of shareholders may be called or to conduct the meeting in the manner prescribed by the articles and by-laws of Canadian Solar Inc. and the OBCA, or if for any other reason the court thinks fit, the court, upon the application of a director or a shareholder entitled to vote at the meeting, may order a meeting to be called, held and conducted in such manner as the court directs and upon such terms as to security for the costs of holding the meeting or otherwise as the court deems fit.

A corporation, shareholder or director may apply to the court to determine any controversy with respect to an election or appointment of a director or auditor of the corporation. Upon an application under this section, the court may make any order it thinks fit including, without limiting the generality of the foregoing, (a) an order restraining a director or auditor whose election or appointment is challenged from acting pending determination of the dispute; (b) an order declaring the result of the disputed election or appointment; (c) an order requiring a new election or appointment and including in the order directions for the management of the business and affairs of the corporation until a new election is held or appointment made; and (d) an order determining the voting rights of shareholders and of persons claiming to own shares.

Limitations on Ownership of Securities

Except as provided below, there are no limitations specific to the rights of non-Canadians to hold or vote our shares under the laws of Canada or Ontario, or in our articles or by-laws.

Competition Act

Limitations on the ability to acquire and hold our shares may be imposed by the *Competition Act* (Canada). This legislation establishes a pre-merger notification regime for certain types of merger transactions that exceed certain statutory shareholding and financial thresholds. Transactions that are subject to notification cannot be closed until the required materials are filed and the applicable statutory waiting period has expired or been waived by the Commissioner of Competition, or the Commissioner. Further, the *Competition Act* (Canada) permits the Commissioner to review any acquisition of control over or of a significant interest in us, whether or not it is subject to mandatory notification. This legislation grants the Commissioner jurisdiction, for up to one year, to challenge this type of acquisition before the Canadian Competition Tribunal if it would, or would be likely to, substantially prevent or lessen competition in any market in Canada.

Investment Canada Act

The *Investment Canada Act* requires notification and, in certain cases, advance review and approval by the Government of Canada, through the Minister of Innovation, Science and Industry (the “**Minister**”), of an investment to establish a new Canadian business by a non-Canadian or of the acquisition by a non-Canadian of “control” of a “Canadian business”, all as defined in the *Investment Canada Act*. Generally, the threshold for advance review and approval will be higher in monetary terms for an investor who is controlled in a country that is a member of the World Trade Organization and who is not a state-owned enterprise. The *Investment Canada Act* generally prohibits the implementation of such a reviewable transaction unless, after review, the Minister is satisfied that the investment is likely to be of net benefit to Canada. The *Investment Canada Act* contains various rules to determine if there has been an acquisition of control. For example, for purposes of determining whether an investor has acquired control of a corporation by acquiring shares, the following general rules apply, subject to certain exceptions: (1) the acquisition of a majority of the voting shares of a corporation is deemed to be acquisition of control of that corporation; (2) the acquisition of less than a majority but one-third or more of the voting shares of a corporation is presumed to be an acquisition of control of that corporation unless it can be established that, on the acquisition, the corporation is not controlled in fact by the acquiror through the ownership of voting shares; and (3) the acquisition of less than one-third of the voting shares of a corporation is deemed not to be acquisition of control of that corporation.

In addition, under the *Investment Canada Act*, “national security” review on a discretionary basis may also be undertaken by the federal Canadian government in respect of a much broader range of investments by a non-Canadian to “acquire, in whole or in part, or to establish an entity carrying on all or any part of its operations in Canada”, with the relevant test being whether the Minister has “reasonable grounds to believe that an investment by a non-Canadian could be injurious to national security.” The Minister has broad discretion to determine whether an investor is a non-Canadian and therefore may be subject to “national security” review. Review on national security grounds is at the discretion of the federal government and may occur on a pre- or post-closing basis. If the Minister, after consultation with the Minister of Public Safety and Emergency Preparedness, considers that the investment could be injurious to “national security”, the Minister refers the investment to the Governor in Council. On referral of an investment, if the Governor in Council determines the investment could be injurious to “national security”, the Governor in Council may take any measures in respect of the investment that it considers advisable to protect national security, including denying the investment, asking for undertakings, imposing terms or conditions for the investment, or ordering divestiture (if the investment has been completed). Any of these provisions may discourage a potential acquirer from proposing or completing a transaction that may have otherwise presented a premium to our shareholders. We cannot predict whether investors will find our company and our common shares less attractive because we are governed by foreign laws.

Provisions that would have an Effect of Delaying, Deferring or Preventing a Change of Control

The following provisions in Canadian Solar Inc.'s articles may deprive our shareholders of the opportunity to sell their shares at a premium over the prevailing market price by delaying or preventing a change of control of our company:

- Our board of directors has the authority, without approval from the shareholders, to issue an unlimited number of preferred shares, in one or more series, at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series. See "Item 10. Additional Information—B. Articles" for a more detailed description of the attributes of the preferred shares.
- Our board of directors is entitled to fix and may change the number of directors within the minimum and maximum number of directors provided for in our articles (i.e., a minimum of three and a maximum of ten directors). Our board of directors may appoint one or more additional directors, who shall hold office for a term expiring not later than the close of the next annual meeting of shareholders, but the total number of directors so appointed may not exceed one-third of the number of directors elected at the previous annual meeting of shareholders.

In addition, Canadian Solar Inc.'s by-laws and the OBCA provide for minimum time periods for the calling and holding of meetings of shareholders. See "Item 10. Additional Information—B. Articles—Shareholder Meetings" for more information.

Otherwise, there are no provisions in Canadian Solar Inc.'s articles or by-laws or in the OBCA that would have an effect of delaying, deferring or preventing a change in control of our company which would operate with respect to a merger, acquisition or corporate restructuring involving our company or any of our subsidiaries.

Provisions Governing the Ownership Threshold Above Which Shareholder Ownership Must be Disclosed

Canadian Solar Inc.'s articles and by-laws do not have any specific threshold requiring disclosure of ownership by holders of our shares. The OBCA and securities regulation in Canada requires that we disclose in our proxy information circular for our annual general meeting and certain other disclosure documents filed by us under such regulation, holders who beneficially own, directly or indirectly, or control or direct, voting securities of Canadian Solar Inc. carrying 10% or more of the voting rights attached to any class of outstanding voting securities. Most state corporation statutes do not contain provisions governing the threshold above which shareholder ownership must be disclosed. United States federal securities laws require us to disclose, in an annual report on Form 20-F, holders who own 5% or more of Canadian Solar Inc.'s issued and outstanding shares.

Conditions Imposed by Our Articles and By-Laws Governing Changes in Capital

The requirements imposed by Canadian Solar Inc.'s articles and by-laws governing changes in capital are not more stringent than is required by applicable laws, including the OBCA.

C Material Contracts

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" or elsewhere in this annual report on Form 20-F.

D Exchange Controls

See "Item 4. Information on the Company—B. Business Overview—Government Regulations—Foreign Currency Exchange" and "Item 4. Information on the Company—B. Business Overview—Government Regulations—Dividend Distribution."

E Taxation

Principal Canadian Federal Tax Considerations

General

The following is a summary of the principal Canadian federal income tax implications generally applicable to a holder of our common shares who, at all relevant times, is a resident of the United States for purposes of the Canada-United States Income Tax Convention (1980) (the “**Convention**”), is fully entitled to the benefits of the Convention, and did not, does not and will not have a fixed base or permanent establishment in Canada within the meaning of the Convention, and who, at all relevant times for purposes of the *Income Tax Act* (Canada) (the “**Canadian Tax Act**”), (i) is not a resident, or deemed to be a resident, of Canada; (ii) holds such common shares as capital property and as beneficial owner; (iii) deals at arm’s length with and is not affiliated with us; (iv) does not use or hold, and is not deemed to use or hold, such common shares in the course of carrying on a business in Canada; (v) did not acquire our common shares by virtue of employment, and (vi) is not a financial institution, specified financial institution, registered non-resident insurer, authorized foreign bank, partnership or trust as defined in the Canadian Tax Act (a “**U.S. Holder**”).

This summary assumes that we are a resident of Canada for the purposes of the Canadian Tax Act. Should it be determined that we are not a resident of Canada for the purposes of the Canadian Tax Act by virtue of being resident in another country (such as the PRC) by virtue of the application of an income tax convention between Canada and that other country, the Canadian income tax consequences to a U.S. Holder will differ from those described herein and U.S. Holders should consult their own tax advisors.

This summary is based on the current provisions of the Canadian Tax Act, and the regulations thereunder, the Convention, and our understanding of the published administrative practices and policies of the Canada Revenue Agency, all in effect as of the date of this annual report on Form 20-F. This summary takes into account all specific proposals to amend the Canadian Tax Act or the regulations thereunder publicly announced by or on behalf of the Minister of Finance (Canada) prior to the date of this annual report on Form 20-F. No assurances can be given that such proposed amendments will be enacted in the form proposed, or at all. This is not an exhaustive summary of all potential Canadian federal income tax consequences to a U.S. Holder and this summary does not take into account or anticipate any other changes in law or administrative practices, whether by judicial, governmental or legislative action or decision, nor does it take into account provincial, territorial or foreign tax legislation or considerations, which may differ from the Canadian federal income tax considerations described herein.

The Canadian federal income tax consequences of acquiring, holding and disposing of our common shares will depend on each U.S. Holder’s particular situation. This summary is not intended to be a complete analysis of or description of all potential Canadian federal income tax consequences, and should not be construed to be, legal, business or tax advice directed at any particular U.S. Holder or prospective purchaser of our common shares. Accordingly, U.S. Holders or prospective purchasers of our common shares should consult their own tax advisors for advice with respect to the Canadian federal income tax consequences of an investment in our common shares based on their own particular circumstances.

Dividends

Amounts paid or credited, or deemed under the Canadian Tax Act to be paid or credited, on account or in lieu of payment of, or in satisfaction of, dividends to a U.S. Holder that has provided the requisite documentation regarding its entitlement to benefits under the Convention will be subject to Canadian withholding tax at the reduced rate of 15% under the Convention. This rate is further reduced to 5% in the case of a U.S. Holder that is a company for purposes of the Convention that owns at least 10% of our voting shares at the time the dividend is paid or deemed to be paid.

Disposition of Our Common Shares

A U.S. Holder will not be subject to income tax under the Canadian Tax Act in respect of any capital gain realized on a disposition or deemed disposition of our common shares that it holds unless, at the time of disposition, such common shares constitute “taxable Canadian property” of the U.S. Holder for the purposes of the Canadian Tax Act and the U.S. Holder is not otherwise entitled to an exemption under the Convention.

Provided that our common shares are then listed on a “designated stock exchange” for purposes of the Canadian Tax Act (which currently includes the Nasdaq), at the time of disposition, our common shares generally will not constitute taxable Canadian property of a U.S. Holder at that time, unless at any time during the 60 month period immediately preceding the disposition of the common shares (i) 25% or more of the issued shares of any class or series of the capital stock of our company were owned by, or belonged to, any combination of (a) the U.S. Holder, (b) persons with whom the U.S. Holder did not deal at arm’s length, and (c) partnerships in which the U.S. Holder or a person described in (b) held a membership interest directly or indirectly through one or more partnerships; and (ii) at such time, more than 50% of the fair market value of such shares was derived, directly or indirectly, from any combination of real or immovable property situated in Canada, “Canadian resource property” (as defined in the Canadian Tax Act), “timber resource property” (as defined in the Canadian Tax Act), or options in respect of, interests in, or for civil law rights in such properties, whether or not such property exists. Notwithstanding the foregoing, our common shares may also be deemed to be taxable Canadian property to a U.S. Holder for purposes of the Canadian Tax Act in certain circumstances.

U.S. Holders for whom our common shares are, or may be, taxable Canadian property should consult their own tax advisors.

Canada—United States Income Tax Convention

The Convention includes a complex limitation on benefits provision. U.S. Holders are urged to consult their own tax advisors to determine their entitlement to benefits under the Convention.

United States Federal Income Taxation

The following discussion describes certain material United States federal income tax consequences to a United States Holder (as defined below), under current law, of an investment in our common shares. This discussion is based on the federal income tax laws of the United States as of the date of this annual report on Form 20-F, including the United States Internal Revenue Code of 1986, as amended, or the Code, existing and proposed Treasury regulations promulgated thereunder, judicial authority, published administrative positions of the United States Internal Revenue Service, or IRS, and other applicable authorities, all as of the date of this annual report on Form 20-F. All of the foregoing authorities are subject to change, which change could apply retroactively and could significantly affect the tax consequences described below. We have not sought any ruling from the IRS with respect to the statements made and the conclusions reached in the following discussion and there can be no assurance that the IRS or a court will agree with our statements and conclusions. This discussion, moreover, does not address the United States federal estate, gift, Medicare, and alternative minimum tax consequences, or any state, local and non-United States tax consequences, relating to an investment in our common shares. Except as explicitly described below, this discussion does not address any tax consequences or reporting obligations that may be applicable to persons holding our common shares through a bank, financial institution or other entity, or a branch thereof, located, organized or resident outside the United States, and does not describe any tax consequences arising in respect of the “Foreign Account Tax Compliance Act”, or FATCA, regime.

This discussion applies only to a United States Holder (as defined below) that holds our common shares as capital assets for United States federal income tax purposes (generally, property held for investment). The discussion neither addresses the tax consequences to any particular investor nor describes all of the tax consequences applicable to persons in special tax situations such as:

- banks and certain other financial institutions;
- insurance companies;
- regulated investment companies;
- real estate investment trusts;
- brokers or dealers in stocks and securities, or currencies;
- persons that use or are required to use a mark-to-market method of accounting;
- certain former citizens or residents of the United States subject to Section 877 of the Code;
- entities subject to the United States anti-inversion rules;
- tax-exempt organizations and entities;
- persons subject to the alternative minimum tax provisions of the Code;
- persons whose functional currency is other than the United States dollar;

- persons holding common shares as part of a straddle, hedging, conversion or integrated transaction;
- persons that actually or constructively own common shares representing 10% or more of our total voting power or value;
- persons who acquired common shares pursuant to the exercise of an employee stock option or otherwise as compensation;
- partnerships or other pass-through entities, or persons holding common shares through such entities;
- persons required to accelerate the recognition of any item of gross income with respect to our common shares as a result of such income being recognized on an applicable financial statement; or
- persons that held, directly, indirectly or by attribution, common shares or other ownership interest in us prior to our initial public offering.

If a partnership (including an entity or arrangement treated as a partnership for United States federal income tax purposes) holds our common shares, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. A partnership holding our common shares, or a partner in such a partnership, should consult its tax advisors regarding the tax consequences of investing in and holding our common shares.

THE FOLLOWING DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT A SUBSTITUTE FOR CAREFUL TAX PLANNING AND ADVICE. HOLDERS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE UNITED STATES FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER THE FEDERAL ESTATE OR GIFT TAX LAWS OR THE LAWS OF ANY STATE, LOCAL OR NON-UNITED STATES TAXING JURISDICTION OR UNDER ANY APPLICABLE TAX TREATY.

For purposes of the discussion below, a “United States Holder” is a beneficial owner of our common shares that is, for United States federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to United States federal income taxation regardless of its source; or
- a trust, if (i) a court within the United States is able to exercise primary jurisdiction over its administration and one or more United States persons have the authority to control all of its substantial decisions or (ii) in the case of a trust that was treated as a domestic trust under the law in effect before 1997, a valid election is in place under applicable Treasury regulations to treat such trust as a domestic trust.

Dividends and Other Distributions on the Common Shares

Subject to the passive foreign investment company rules discussed below, the gross amount of any distribution that we make to you with respect to our common shares (including any amounts withheld to reflect Canadian or PRC withholding taxes) will be taxable as a dividend, to the extent paid out of our current or accumulated earnings and profits, as determined under United States federal income tax principles. Such income (including any withheld taxes) will be includable in your gross income on the day actually or constructively received by you. Because we do not intend to determine our earnings and profits on the basis of United States federal income tax principles, any distribution paid generally will be reported as a “dividend” for United States federal income tax purposes. Such dividends will not be eligible for the dividends-received deduction allowed to qualifying corporations under the Code.

Dividends received by a non-corporate United States Holder may qualify for the lower rates of tax applicable to “qualified dividend income,” if the dividends are paid by a “qualified foreign corporation” and other conditions discussed below are met. A non-United States corporation is treated as a qualified foreign corporation (a) with respect to dividends paid by that corporation on shares that are readily tradable on an established securities market in the United States or (b) if such non-United States corporation is eligible for the benefits of a qualifying income tax treaty with the United States that includes an exchange of information program. However, a non-United States corporation will not be treated as a qualified foreign corporation if it is a passive foreign investment company in the taxable year in which the dividend is paid or the preceding taxable year.

Under a published IRS Notice, common shares are considered to be readily tradable on an established securities market in the United States if they are listed on the Nasdaq Global Market, as our common shares are, but we cannot guarantee that our common shares will always be so listed. In addition, we may be eligible for the benefits of the income tax treaty between the United States and Canada, or, if we are treated as a PRC resident enterprise under the PRC tax law (see “—People’s Republic of China Taxation”) then we may be eligible for the benefits of the income tax treaty between the United States and the PRC. If we are eligible for such benefits, then dividends that we pay to certain non-corporate United States Holders on our common shares would, subject to applicable limitations, be eligible for the reduced rates of taxation.

Even if dividends would be treated as paid by a qualified foreign corporation, a non-corporate United States Holder will not be eligible for reduced rates of taxation if it does not hold our common shares for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date (disregarding certain periods of ownership while the United States Holder’s risk of loss is diminished) or if such United States Holder elects to treat the dividend income as “investment income” pursuant to Section 163(d)(4) of the Code. In addition, the rate reduction will not apply to dividends of a qualified foreign corporation if the non-corporate United States Holder receiving the dividend is obligated to make related payments with respect to positions in substantially similar or related property.

You should consult your tax advisors regarding the availability of the lower tax rates applicable to qualified dividend income for any dividends that we pay with respect to the common shares, as well as the effect of any change in applicable law after the date of this annual report on Form 20-F.

Any Canadian or PRC withholding taxes imposed on dividends paid to you with respect to our common shares (at a rate not exceeding any applicable treaty rate in the case of a United States Holder that is eligible for the benefits of a relevant treaty) generally will be treated as foreign taxes eligible for deduction or credit against your United States federal income tax liability, subject to the various limitations and disallowance rules that apply to foreign tax credits generally (including that the election to deduct or credit foreign taxes applies to all of your other applicable foreign taxes for a particular tax year). For purposes of calculating the foreign tax credit, dividends paid to you with respect to the common shares will be treated as income from sources outside the United States and generally will constitute passive category income, or in certain cases, general category income. The rules relating to the determination of the foreign tax credit are complex and recently issued Treasury Regulations have introduced additional requirements and limitations to the foreign tax credit rules. You should consult your tax advisors regarding the availability of a foreign tax credit in your particular circumstances.

The amount of any dividend paid in currency other than the United States dollar will be the dividend’s United States dollar value calculated by reference to the exchange rate in effect on the date of receipt, regardless of whether the payment is in fact converted into United States dollars. A United States Holder may have foreign currency gain or loss, which generally will be United States source ordinary income or loss, if any dividend is converted into United States dollars after the date of receipt.

Disposition of the Common Shares

You will recognize gain or loss on a sale or exchange of our common shares in an amount equal to the difference between the amount realized on the sale or exchange and your tax basis in the common shares. Subject to the discussion under “—Passive Foreign Investment Company” below, such gain or loss generally will be capital gain or loss. Capital gains of a non-corporate United States Holder, including an individual, that has held the common share for more than one year currently are eligible for reduced tax rates. The deductibility of capital losses is subject to limitations.

Any gain or loss that you recognize on a disposition of our common shares generally will be treated as United States-source income or loss for foreign tax credit limitation purposes. However, if we are treated as a PRC resident enterprise for PRC tax purposes and PRC tax is imposed on gain from the disposition of our common shares (see “—People’s Republic of China Taxation”) then a United States Holder that is eligible for the benefits of the income tax treaty between the United States and the PRC may elect to treat the gain as PRC-source income for foreign tax credit purposes. If such an election is made, the gain so treated will be treated as a separate class or “basket” of income for purposes of the foreign tax credit. You should consult your tax advisors regarding the proper treatment of gain or loss, as well as the availability of a foreign tax credit, in your particular circumstances.

A United States Holder that receives currency other than the United States dollar upon the sale or other disposition of our common shares generally will realize an amount equal to the United States dollar value of the foreign currency on the date of such sale or other disposition or, if our common shares are traded on an established securities market, in the case of cash basis and electing accrual basis taxpayers, the settlement date. If a United States Holder is not able to treat the settlement date as the realization date, the United States Holder generally will recognize currency gain or loss if the United States dollar value of the currency received on the settlement date differs from the amount realized. A United States Holder will have a tax basis in the currency received equal to the United States dollar amount at the spot rate on the settlement date. Generally, any gain or loss realized by a United States Holder on a subsequent conversion or disposition of such currency will be United States source ordinary income or loss.

Passive Foreign Investment Company

Based on the value of our assets and the nature and composition of our income and assets, we do not believe we were a passive foreign investment company, or PFIC, for United States federal income tax purposes for our taxable year ended December 31, 2022. PFIC status is based on an annual determination that cannot be made until the close of a taxable year, involves extensive factual investigation, including ascertaining the fair market value of all of our assets on a quarterly basis and the character of each item of income that we earn, and is subject to uncertainty in several respects. Moreover, we cannot guarantee that the United States Internal Revenue Service, or IRS, will agree with any positions that we take. Accordingly, we cannot assure you that we will not be treated as a PFIC for any taxable year or that the IRS will not take a position contrary to any position that we take.

We will be treated as a PFIC for United States federal income tax purposes for any taxable year if, applying applicable look-through rules, either:

- at least 75% of our gross income for such year is passive income; or
- at least 50% of the value of our assets (generally determined based on a quarterly average) during such year is attributable to assets that produce or are held for the production of passive income.

For this purpose, passive income generally includes dividends, interest, royalties, rents and gains from commodities transactions (other than certain royalties, rents and commodities gains derived in the active conduct of a trade or business and not derived from a related person). We will be treated as owning a proportionate share of the assets and earning a proportionate share of the income of any other corporation in which we own, directly or indirectly, more than 25% by value of the stock. We hold a substantial amount of cash and other assets treated as producing passive income and if the percentage of our assets treated as producing passive income increases, we may be more likely to be a PFIC for the current or one or more future taxable years.

Changes in the nature or composition of our income or assets may cause us to be more likely to be a PFIC. The determination of whether we will be a PFIC for any taxable year also may depend in part upon the value of our goodwill and other unbooked intangibles not reflected on our balance sheet (which may be determined based upon the market value of the common shares from time to time, which may be volatile) and by how, and how quickly, we spend our liquid assets and the cash we generate from our operations. Among other matters, if our market capitalization declines, we may be a PFIC because our liquid assets and cash (which are for this purpose considered assets that produce passive income) may then represent a greater percentage of our overall assets. Further, while we believe our classification methodology and valuation approach (including, if relevant, any approach taken with respect to our market capitalization) are reasonable, it is possible that the IRS may challenge our classification or valuation of our goodwill and other unbooked intangibles, which may result in our being or becoming a PFIC for the current taxable year or one or more future taxable years.

If we are a PFIC for any taxable year during your holding period for our common shares, we will continue to be treated as a PFIC with respect to you for all succeeding years during which you hold common shares, unless we were to cease to be a PFIC and you make a "deemed sale" election with respect to the common shares. If such election is made, you will be deemed to have sold the common shares you hold at their fair market value and any gain from such deemed sale would be subject to the rules described in the following two paragraphs. After the deemed sale election, so long as we do not become a PFIC in a subsequent taxable year, your common shares with respect to which such election was made will not be treated as shares in a PFIC and, as a result, you will not be subject to the rules described below with respect to any "excess distribution" you receive from us or any gain from a sale or other taxable disposition of the common shares. You are strongly urged to consult your tax advisors as to the possibility and consequences of making a deemed sale election if we are and then cease to be a PFIC and such an election becomes available to you.

If we are a PFIC for any taxable year during your holding period for our common shares, then, unless you make a "mark-to-market" election (as discussed below), you generally will be subject to special and adverse tax rules with respect to any "excess distribution" that you receive from us and any gain that you recognize from a sale or other disposition, including a pledge, of the common shares. For this purpose, distributions that you receive in a taxable year that are greater than 125% of the average annual distributions that you received during the shorter of the three preceding taxable years or your holding period for the common shares will be treated as an excess distribution. Under these rules:

- the excess distribution or recognized gain will be allocated ratably over your holding period for the common shares;
- the amount of the excess distribution or recognized gain allocated to the taxable year of distribution or gain, and to any taxable years in your holding period prior to the first taxable year in which we were treated as a PFIC, will be treated as ordinary income; and

- the amount of the excess distribution or recognized gain allocated to each other taxable year will be subject to the highest tax rate in effect for individuals or corporations, as applicable, for each such year and the resulting tax will be subject to the interest charge generally applicable to underpayments of tax.

If we are a PFIC for any taxable year during your holding period for our common shares and any of our non-United States subsidiaries or other corporate entities in which we directly or indirectly own equity interests is also a PFIC, you would be treated as owning a proportionate amount (by value) of the shares of each such non-United States entity classified as a PFIC (each such entity, a lower-tier PFIC) for purposes of the application of these rules. You should consult your tax advisor regarding the application of the PFIC rules to any of our lower tier PFICs.

If we are a PFIC for any taxable year during your holding period for our common shares, then in lieu of being subject to the tax and interest-charge rules discussed above, you may make an election to include gain on the common shares as ordinary income under a mark-to-market method, provided that the common shares constitute "marketable stock." Marketable stock is stock that is regularly traded on a qualified exchange or other market, as defined in applicable Treasury regulations. Our common shares are listed on the Nasdaq Global Market, which is a qualified exchange or other market for these purposes. Consequently, as long as our common shares are regularly traded, and you are a holder of such common shares, we expect that the mark-to-market election would be available to you, if we become a PFIC, but no assurances are given in this regard.

Because a mark-to-market election cannot be made for any lower-tier PFICs that we may own, if we were a PFIC for any taxable year, a United States Holder that makes a mark-to-market election with respect to our common shares may continue to be subject to the tax and interest charges under the general PFIC rules with respect to such United States Holder's indirect interest in any investments held by us that are treated as an equity interest in a PFIC for United States federal income tax purposes.

In certain circumstances, a United States holder of shares in a PFIC may avoid the adverse tax and interest-charge regime described above by making a "qualified electing fund" election to include in income its share of the corporation's income on a current basis. However, you may make a qualified electing fund election with respect to your common shares only if we agree to furnish you annually with a PFIC annual information statement as specified in the applicable Treasury regulations. We currently do not intend to prepare or provide the information that would enable you to make a qualified electing fund election.

A United States Holder that holds our common shares in any year in which we are classified as a PFIC will be required to file an annual report containing such information as the United States Treasury Department may require. You should consult your tax advisor regarding the application of the PFIC rules to your ownership and disposition of the common shares and the availability, application and consequences of the elections discussed above.

Information Reporting and Backup Withholding

Information reporting to the IRS and backup withholding generally will apply to dividends in respect of our common shares, and the proceeds from the sale or exchange of our common shares, that are paid to you within the United States (and in certain cases, outside the United States), unless you furnish a correct taxpayer identification number and make any other required certification, generally on IRS Form W-9, or you otherwise establish an exemption from information reporting and backup withholding. Backup withholding is not an additional tax. Amounts withheld as backup withholding generally are allowed as a credit against your United States federal income tax liability, and you may be entitled to obtain a refund of any excess amounts withheld under the backup withholding rules if you file an appropriate claim for refund with the IRS and furnish any required information in a timely manner.

United States Holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules.

Information with Respect to Foreign Financial Assets

United States Holders who are individuals (and certain entities closely held by individuals) generally will be required to report our name, address and such information relating to an interest in the common shares as is necessary to identify the class or issue of which your common shares are a part. These requirements are subject to exceptions, including an exception for common shares held in accounts maintained by certain financial institutions and an exception applicable if the aggregate value of all "specified foreign financial assets" (as defined in the Code) does not exceed US\$50,000.

United States Holders should consult their tax advisors regarding the application of these information reporting rules.

People's Republic of China Taxation

Under the EIT Law, which took effect as of January 1, 2008 and amended on February 24, 2017 and December 29, 2018, enterprises established under the laws of non-PRC jurisdictions but whose “de facto management body” is located in China are considered “resident enterprises” for PRC tax purposes. Under the implementation regulations issued by the State Council relating to the EIT Law, “de facto management bodies” are defined as the bodies that have material and overall management and control over the business, personnel, accounts and properties of an enterprise. The Circular on Identification of China-controlled Overseas-registered Enterprises as Resident Enterprises on the Basis of Actual Management Organization, or Circular 82, further provides certain specific criteria for determining whether the “de facto management body” of a PRC-controlled offshore incorporated enterprise is located in the PRC. The criteria include whether (a) the premises where the senior management and the senior management bodies responsible for the routine production and business management of the enterprise perform their functions are mainly located within the PRC, (b) decisions relating to the enterprise’s financial and human resource matters are made or subject to approval by organizations or personnel in the PRC, (c) the enterprise’s primary assets, accounting books and records, company seals, and board and shareholders’ meeting minutes are located or maintained in the PRC and (d) 50% or more of voting board members or senior executives of the enterprise habitually reside in the PRC. Although the Circular 82 only applies to offshore enterprises controlled by enterprises or enterprise group located within the PRC, the determining criteria set forth in the Circular 82 may reflect the tax authorities’ general position on how the “de facto management body” test may be applied in determining the tax resident status of offshore enterprises. As the tax resident status of an enterprise is subject to the determination by the PRC tax authorities, uncertainties remain with respect to the interpretation of the term “de facto management body” as applicable to us.

Under the EIT Law and its implementation regulations, dividends paid to a non-PRC investor are generally subject to a 10% PRC withholding tax, if such dividends are derived from sources within China and the non-PRC investor is considered to be a non-resident enterprise without any establishment or place within China or if the dividends paid have no connection with the non-PRC investor’s establishment or place within China, unless such tax is eliminated or reduced under an applicable tax treaty. Similarly, any gain realized on the transfer of shares or convertible notes by such investor is also subject to a 10% PRC withholding tax if such gain is regarded as income derived from sources within China, unless such tax is eliminated or reduced under an applicable tax treaty.

The implementation regulations of the EIT Law provide that (a) if the enterprise that distributes dividends is domiciled in the PRC, or (b) if gains are realized from transferring equity interests of enterprises domiciled in the PRC, then such dividends or capital gains shall be treated as China-sourced income. Currently there are no detailed rules applicable to us that govern the procedures and specific criteria for determining the meaning of being “domiciled” in the PRC. As such, it is not clear how the concept of domicile will be interpreted under the EIT Law. Domicile may be interpreted as the jurisdiction where the enterprise is incorporated or where the enterprise is a tax resident.

As a result, if we are considered a PRC “resident enterprise” for tax purpose, it is possible that the dividends we pay with respect to our common shares to non-PRC enterprises, or the gain non-PRC enterprises may realize from the transfer of our common shares or our convertible notes, would be treated as income derived from sources within China and be subject to the PRC withholding tax at a rate of 10% or a lower applicable treaty rate for enterprises.

Under the IIT Law, individual income tax is payable on PRC-source dividend income. The implementation regulations of the IIT Law provide that income from dividends derived from companies, enterprises and other economic organizations in China as well as income realized from transfer of properties in China is considered derived from sources inside China, regardless of whether the place of payment was inside China. Therefore, if we are treated as a company in China for tax purposes, any dividends we pay to our non-PRC individual shareholders as well as any gains realized by our non-PRC individual shareholders or our non-PRC individual note holders from the transfer of our common shares or our convertible notes may be regarded as China-sourced income and, consequently, be subject to PRC withholding tax at a rate of up to 20% or a lower applicable treaty rate for individuals.

F Dividends and Paying Agents

Not applicable.

G Statement by Experts

Not applicable.

H Documents on Display

We previously filed with the SEC our registration statements on Form F-1 (File Number 333-138144), initially filed on October 23, 2006, and registration statements on Form F-3 (File Number 333-208828), initially filed on January 4, 2016.

We are subject to the periodic reporting and other informational requirements of the Exchange Act. 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 within four months after the end of each fiscal year for fiscal years ending on or after December 15, 2011. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the Securities and Exchange Commission at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the Commission at 1-800-SEC-0330. 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 under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

Our financial statements have been prepared in accordance with U.S. GAAP.

We will furnish our shareholders with annual reports, which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP.

I Subsidiary Information

For a listing of our significant subsidiaries, see “Item 4. Information on the Company—C. Organizational Structure.”

J Annual Report to Security Holders

Not applicable.

ITEM 11 QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Exchange Risk

Our business transactions are carried out in various currencies. We continually evaluate our foreign currency exposure based on current market conditions and the locations in which we conduct business. The Company manages most foreign currency exposures on a consolidated basis, which allows it to net certain exposures and take advantage of natural offsets. The majority of our sales in 2022 are denominated in U.S. dollars, Renminbi and Euros, with the remainder in other currencies such as Brazilian reals, Japanese yen, South African rand, Australian dollars and British pounds. From time to time, we enter into loan arrangements with commercial banks that are denominated primarily in Renminbi, U.S. dollars, Japanese yen, Brazilian reals and Euros. These transactions involve sales, purchases, borrowings, and investments in currencies other than the functional currencies of different companies in CSI. Therefore, fluctuations in currency exchange rates could have a significant impact on the cash flows we expect to receive or pay. The fluctuations in exchange rates could cause us significant foreign currency transaction risk. We recorded a foreign exchange loss of \$47.2 million in 2021 and a foreign exchange gain of \$77.7 million in 2022. We cannot predict the impact of future exchange rate fluctuations on our results of operations and may incur net foreign currency losses in the future.

In order to mitigate and limit our exposure to fluctuations in foreign currency rates, from time to time, we enter into derivative transactions to hedge part of our foreign currency exposures primarily against the U.S. dollars using foreign currency forward or option contracts. We incurred a gain on change in fair value of foreign currency derivatives, net of \$22.8 million in 2021 and a loss on change in fair value of foreign currency derivatives, net of \$40.5 million in 2022. The gains or losses on change in fair value of foreign currency derivatives, net are related to our hedging program.

As of December 31, 2022, we had approximately \$443.9 million equivalent of monetary net liabilities balances denominated in various transactional currencies. A 10% appreciation or depreciation of these transactional currencies against their corresponding functional currencies would have an impact of approximately \$44.4 million on our foreign exchange loss or gain, excluding the effect of our hedging activities.

In addition, our financial statements are presented in U.S. dollars, while some of our subsidiaries use different functional currencies, such as the Renminbi, Euros, Canadian dollars, Japanese yen, Brazilian reals, Australian dollars and British pounds. The value of our common shares would be affected by the foreign currency translation risk resulted from the fluctuation between the U.S. dollar and functional currencies of our subsidiaries. To the extent we hold assets denominated in currencies other than U.S. dollars, any appreciation of such currencies against the U.S. dollars will likely result in an exchange gain while any depreciation will likely result in an exchange loss when we convert the value of these assets into U.S. dollar equivalent amounts. On the other hand, to the extent we have liabilities denominated in currencies other than U.S. dollars, any appreciation of such currencies against the U.S. dollar will likely result in an exchange loss while any depreciation will likely result in an exchange gain when we convert the value of these liabilities into U.S. dollar equivalent amounts. In addition, because our financing to scale operations could be in different currencies from our assets, our foreign exchange risks may increase.

As we continue to expand our business into new markets, particularly emerging markets, our total foreign currency exchange risk could increase significantly.

These and other effects on our financial conditions resulting from the unfavorable changes in foreign currency exchange rates could have a material adverse effect on the market price of our common shares, the dividends we may pay in the future, and your investment.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expense under our short-term and long-term bank borrowings, as well as interest income generated by excess cash invested in demand deposits and liquid investments with original maturities of three months or less. Such interest-earning instruments carry a degree of interest rate risk. We use derivative financial instruments, such as interest rates swap, to manage some of our interest risk exposure. Our future interest expense may increase due to changes in market interest rates.

Taking into account our floating-rate debt, a hypothetical increase in interest rates of 1% would result in an increase in annual interest expense of approximately \$12.1 million from debt outstanding as of December 31, 2022 (a hypothetical increase of 1% would have resulted in an increase in annual interest expense of approximately \$8.1 million from debt outstanding as of December 31, 2021).

Commodity Price Risk

We are exposed to price risks for the raw materials, components, logistics services, and energy costs used in the manufacturing and transportation of our solar modules, and EPC costs for our energy business.

Some of our raw materials and components are sourced from a limited number of suppliers. From time to time, we enter into long-term supply contracts for raw materials. Accordingly, we are exposed to price changes in the raw materials and components used in our solar modules.

In addition, the failure of a key supplier could disrupt our supply chain, which could result in higher costs. To the extent that we are not able to pass these increased costs on to our customers, our business, cash flows, financial condition and results of operations may be materially and adversely affected.

From time to time, we may utilize derivative hedging instruments to mitigate such raw material price changes. Also, we plan to continue to diversify our external wafer and polysilicon suppliers.

For our supply chain management, see "Item 4. Information of the Company—B. Business Overview—Supply Chain Management." For risks relating to the long-term agreements with our raw material suppliers, see "Item 3. Key Information—D. Risk Factors—Risks Related to Our Company and Our Industry—Long-term supply agreements may make it difficult for us to adjust our raw material costs should prices decrease. Also, if we terminate any of these agreements, we may not be able to recover all or any part of the advance payments we have made to these suppliers and we may be subject to litigation."

Also, our various subsidiaries within our energy business are exposed, to varying degrees, to commodity price risk, primarily to merchant power prices in the electricity markets and power price volatility especially during grid congestion. If a project does not generate the volume of electricity required by the relevant PPAs, we could incur significant losses if electricity prices in the market rise substantially above the fixed price provided for in the PPAs. If a project generates more electricity than is contracted in the PPAs, the related revenues will be exposed to market price fluctuations. These risks will further increase if we intend to participate in power market trading activities.

Recently, inflation has continued to increase significantly, particularly in the U.S. and Europe, resulting in rising transportation, wages, and other costs. Inflation may generally affect us by increasing our costs and expenses. Although we cannot accurately anticipate the future effect of inflation on our financial condition or results of operations, inflation historically has not had a material impact on our operations. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases for products and services. Our inability to do so could harm our business, financial condition or results of operations.

ITEM 12 DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not applicable.

PART II

ITEM 13 DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None of these events occurred in any of the years ended December 31, 2020, 2021 and 2022.

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

A Material Modifications to the Rights of Security Holders

See “Item 10. Additional Information—B. Articles” for a description of the rights of shareholders, which remain unchanged.

B Use of Proceeds

Not applicable.

ITEM 15 CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, has performed an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this report, as required by Rule 13a-15(b) under the Exchange Act. Based upon that evaluation, our management has concluded that, as of the end of the period covered by this annual report, our disclosure controls and procedures were effective in ensuring that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act was recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms, and that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our chief executive officer and chief financial officer, to allow timely decisions regarding required disclosures.

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As required by Section 404 of the Sarbanes-Oxley Act of 2002 and related rules as promulgated by the Securities and Exchange Commission, our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2022 using criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2022.

Deloitte Touche Tohmatsu Certified Public Accountants LLP, an independent registered public accounting firm, who audited our consolidated financial statements for the year ended December 31, 2022, has also audited the effectiveness of internal control over financial reporting as of December 31, 2022.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Canadian Solar Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Canadian Solar Inc. and subsidiaries (the “Company”) as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated April 18, 2023, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed 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. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte Touche Tohmatsu Certified Public Accountants LLP
Shanghai, China
April 18, 2023

Changes in Internal Controls

Management has evaluated, with the participation of our chief executive officer and chief financial officer, whether any changes in our internal control over financial reporting that occurred during our last fiscal year have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on the evaluation we conducted, management has concluded that no such changes occurred during the period covered by this annual report on Form 20-F.

ITEM 16A AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Lap Tat Arthur Wong qualifies as an “audit committee financial expert” as defined in Item 16A of Form 20-F. Each of the members of the audit committee is an “independent director” as defined in the Nasdaq Marketplace Rules.

ITEM 16B CODE OF ETHICS

Our board of directors has adopted a code of ethics that applies to our directors, officers, employees and agents, including certain provisions that specifically apply to our chief executive officer, chief financial officer, chief operations officer, chief technology officer, vice presidents and any other persons who perform similar functions for us. We have posted our code of business conduct on our website www.canadiansolar.com. We hereby undertake to provide to any person without charge, a copy of our code of business conduct and ethics within ten working days after we receive such person’s written request.

ITEM 16C PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate fees (in whole U.S. dollars) by categories specified below in connection with certain professional services rendered by Deloitte Touche Tohmatsu Certified Public Accountants LLP, our principal external auditors, for the periods indicated. We did not pay any other fees to our auditors during the periods indicated below.

	For the Years Ended	
	December 31,	
	2021	2022
Audit fees ⁽¹⁾	\$ 1,680,000	\$ 1,680,000
Audit related fees ⁽²⁾	\$ 836,011	\$ 805,685
Tax fees ⁽³⁾	\$ —	\$ 117,738

- (1) “Audit fees” means the aggregate fees billed for professional services rendered by our principal auditors for the annual audit of our consolidated financial statements.
- (2) “Audit related fees” represents the aggregate fees billed for assurance and related services by our principal auditors that are reasonably related to the performance of the audit or review of our consolidated financial statements and are not reported as audit fees. These include professional services rendered in connection with statutory audits, agreed upon procedure of our subsidiary companies, quarterly reviews and other related services. In 2021, “Audit related fees” included approximately \$0.5 million for the “at-the-market” offering program of common shares and statutory audits of our subsidiary companies. In 2022, “Audit related fees” included \$0.5 million for statutory audits and agreed upon procedure of our subsidiary companies.
- (3) “Tax fees” of 2022 were for services related to tax advice on master file and local file compliance, which have been rendered by our principal auditor.

The policy of our audit committee is to pre-approve all audit and non-audit services provided by Deloitte Touche Tohmatsu Certified Public Accountants LLP, including audit services, audit-related services, tax services and other services as described above, other than those for de minimis services which are approved by the Audit Committee prior to the completion of the audit. We have a written policy on the engagement of an external auditor.

ITEM 16D EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

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

None.

ITEM 16F CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G CORPORATE GOVERNANCE

None.

ITEM 16H MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16I DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

In May 2022, we were conclusively listed by the SEC as a Commission-Identified Issuer under the HFCAA following the filing of our annual report on Form 20-F for the fiscal year ended December 31, 2021. Our auditor, a registered public accounting firm that the PCAOB was unable to inspect or investigate completely in 2021, issued the audit report for us for the fiscal year ended December 31, 2021. On December 15, 2022, the PCAOB announced that it has secured complete access to inspect and investigate completely PCAOB-registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB also vacated its previous determinations issued in December 2021. For this reason, we do not expect to be identified as a Commission-Identified Issuer under the HFCAA after we file this annual report on Form 20-F.

As of the date of this annual report, to our knowledge, (i) no governmental entities in Canada or in China own any shares of Canadian Solar Inc., (ii) the governmental entities in China do not have a controlling financial interest in Canadian Solar Inc., (iii) none of the members of the board of directors of Canadian Solar Inc. or its operating entities is an official of the Communist Party of China, and (iv) the currently effective articles of continuance of Canadian Solar Inc. do not contain any charter of the Communist Party of China.

ITEM 16J INSIDER TRADING POLICIES

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 Canadian Solar Inc. are included at the end of this annual report.

ITEM 19 EXHIBITS

Exhibit Number	Description of Document
1.1*	Certificate of Continuance and Articles of Continuance of Canadian Solar Inc.
2.1*	Registrant's Specimen Certificate for Common Shares.
2.2*	Description of Securities of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934
2.3	Indenture, dated as of September 15, 2020, between Canadian Solar Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to Exhibit 2.3 of our annual report on Form 20-F for the year ended December 31, 2020 (File No. 001-33107), initially filed with the Securities and Exchange Commission on April 19, 2021).
4.1	Amended and Restated Share Incentive Plan of the Registrant, effective on May 8, 2011 (incorporated by reference to Exhibit 4.1 of our annual report on Form 20-F for the year ended December 31, 2016 (File No. 001-33107), initially filed with the SEC on April 27, 2017)
4.2	Form of Director Indemnity Agreement (incorporated by reference to Exhibit 4.1 of our annual report on Form 20-F for the year ended December 31, 2008 (File No. 001-33107), as amended, initially filed with the SEC on June 8, 2009)
4.3	Employment Agreement between the Registrant and Dr. Shawn Ou (incorporated by reference to Exhibit 10.2 of our registration statement on Form F-1 (File No. 333-138144), as amended, initially filed with the SEC on October 23, 2006)
4.4	Form of Employment Agreement between the Registrant and its executive officers (incorporated by reference to Exhibit 4.7 of our annual report on Form 20-F for the year ended December 31, 2010 (File No. 001-33107), as amended, initially filed with the SEC on May 17, 2011)
8.1*	List of Significant Subsidiaries
12.1*	CFO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	CFO Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	CFO Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.2**	CFO Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Deloitte Touche Tohmatsu Certified Public Accountants LLP
15.2*	Submission under Item 161(a) of Form 20-F in relation to the Holding Foreign Companies Accountable Act
101*	Financial information from registrant for the year ended December 31, 2022 formatted in eXtensible Business Reporting Language (XBRL): (i) Consolidated Balance Sheets as of December 31, 2020 and 2021; (ii) Consolidated Statements of Operations for the Years Ended December 31, 2020, 2021 and 2022; (iii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2020, 2021 and 2022; (iv) Consolidated Statements of Changes in Equity for the Years Ended December 31, 2020, 2021 and 2022; (v) Consolidated Statements of Cash Flows for the Years Ended December 31, 2020, 2021 and 2022; (vi) Notes to Consolidated Financial Statements; and (vii) Additional Information—Financial Statements Schedule I
104*	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith.

** Furnished herewith.

SIGNATURES

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

CANADIAN SOLAR INC.

By: /s/ Shawn (Xiaohua) Qu
Name: Shawn (Xiaohua) Qu
Title: Chairman, President and
Chief Executive Officer

By: /s/ Huifeng Chang
Name: Huifeng Chang
Title: Director and
Chief Financial Officer

Date: April 18, 2023

CANADIAN SOLAR INC.
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Canadian Solar Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Canadian Solar Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, changes in equity, and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes and the financial statement schedule (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated April 18, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

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 PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matter does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition - sales of solar and battery storage projects - Refer to Note 2 (x) and Note 22 to the financial statements

Critical Audit Matter Description

The Company recognizes revenue from the sale of a solar and battery storage project at the point in time when a customer obtains control of the solar and battery storage projects. The dollar amount of revenues from the sale of solar and battery storage projects was \$761,677 thousand for the year ended December 31, 2022. The solar and battery storage projects are often held in separate legal entities which are formed for the special purpose of constructing the solar and battery storage projects, which the Company refers to as "project companies". Management of the Company use its judgment to determine whether deconsolidation of the project companies is appropriate upon transfer of equity interest to the customers, to identify performance obligations, and to estimate the variable consideration, if any, as part of the transaction price.

We identified revenue recognition for sales of solar and battery storage projects as a critical audit matter because of the judgments necessary for management to determine whether it may derecognize the project companies according to Accounting Standard Codification ("ASC") 810-10, to identify performance obligations, and to estimate the variable consideration as part of transaction

price according to ASC 606. This requires a high degree of auditor judgment when performing audit procedures to evaluate management's conclusion of the aforementioned judgmental areas.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's conclusion of de-recognition of the project companies, identification of performance obligations and estimation of variable consideration included the following, among others:

- We tested the effectiveness of controls over revenue recognition for sales of solar and battery storage projects, including management's controls over the conclusion with respect to de-recognition of the project companies, identification of performance obligation and estimation of variable consideration.
- We selected samples of solar and battery storage project sales and performed the following:
 - Evaluated whether the fact patterns within the contracts and other relevant documents were properly included in management's assessment in accordance with ASC 810-10.
 - Evaluated management's accounting analysis in terms of whether the identification of performance obligations, and determination of transaction price, including estimation of variable consideration, if any, is conducted in accordance with ASC 606.
 - Tested the mathematical accuracy of management's calculation of revenue for each performance obligation that can be recognized.

/s/ Deloitte Touche Tohmatsu Certified Public Accountants LLP

Shanghai, China

April 18, 2023

We have served as the Company's auditor since 2006.

CANADIAN SOLAR INC.
CONSOLIDATED BALANCE SHEETS

	December 31, 2021	December 31, 2022
	(In Thousands of U.S. Dollars, except share data)	
ASSETS		
(Including balances in variable interest entities, see Note 10)		
Current assets:		
Cash and cash equivalents	869,831	981,434
Restricted cash	560,633	978,116
Accounts receivable trade, net	651,372	970,950
Accounts receivable, unbilled	37,244	57,770
Amounts due from related parties	73,042	48,614
Inventories	1,192,374	1,524,095
Value added tax recoverable	125,882	158,773
Advances to suppliers, net	225,879	253,484
Derivative assets	7,286	17,516
Project assets	594,107	385,964
Prepaid expenses and other current assets	434,157	267,941
Total current assets	4,771,827	5,644,657
Restricted cash	3,818	9,953
Property, plant and equipment, net	1,401,877	1,826,643
Solar power systems, net	108,263	364,816
Deferred tax assets, net	236,503	229,226
Advances to suppliers, net	34,239	65,352
Investments in affiliates	98,819	115,784
Intangible assets, net	18,992	17,530
Project assets	433,254	438,529
Right-of-use assets	106,297	103,600
Amounts due from related parties	—	33,489
Other non-current assets	174,453	187,549
TOTAL ASSETS	7,388,342	9,037,128
LIABILITIES AND EQUITY		
(Including balances in variable interest entities, see Note 10)		
Current liabilities:		
Short-term borrowings	1,592,870	1,444,816
Accounts payable	502,995	805,300
Short-term notes payable	881,184	1,493,399
Amounts due to related parties	143	89
Other payables	667,854	853,040
Advances from customers	135,512	334,943
Derivative liabilities	2,622	25,359
Operating lease liabilities	12,185	9,810
Other current liabilities	245,783	293,012
Total current liabilities	4,038,148	5,258,768
Long-term borrowings	523,634	813,406
Convertible notes	224,675	225,977
Liability for uncertain tax positions	7,448	5,730
Deferred tax liabilities	48,150	66,630
Loss contingency accruals	15,148	5,000
Operating lease liabilities	23,215	25,714
Financing liabilities	53,641	—
Other non-current liabilities	327,845	329,209
TOTAL LIABILITIES	5,261,904	6,730,434
Commitments and contingencies (Note 21)		
Equity:		
Common shares – no par value: unlimited authorized shares, 64,022,678 and 64,506,055 shares issued and outstanding at December 31, 2021 and 2022, respectively	835,543	835,543
Additional paid-in capital	(19,428)	1,127
Retained earnings	1,035,552	1,275,520
Accumulated other comprehensive loss	(50,584)	(170,551)
Total Canadian Solar Inc. shareholders' equity	1,801,083	1,941,639
Non-controlling interests	325,355	365,055
TOTAL EQUITY	2,126,438	2,306,694
TOTAL LIABILITIES AND EQUITY	7,388,342	9,037,128

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

CANADIAN SOLAR INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,		
	2020	2021	2022
	(In Thousands of U.S. Dollars, except share and per share data)		
Net revenues	3,476,495	5,277,169	7,468,610
Cost of revenues	2,786,581	4,367,857	6,205,474
Gross profit	689,914	909,312	1,263,136
Operating expenses:			
Selling and distribution expenses	224,243	398,650	558,926
General and administrative expenses	225,597	308,942	342,129
Research and development expenses	45,167	58,407	69,822
Other operating income, net	(25,523)	(47,068)	(63,802)
Total operating expense	469,484	718,931	907,075
Income from operations	220,430	190,381	356,061
Other income (expense):			
Interest expense	(71,874)	(58,153)	(74,266)
Interest income	9,306	11,051	40,615
Gain (loss) on change in fair value of derivatives, net	50,001	23,785	(44,489)
Foreign exchange gain (loss), net	(64,820)	(47,234)	77,689
Investment income (loss), net	(8,559)	18,634	858
Total other income (expense)	(85,946)	(51,917)	407
Income before income taxes and equity in earnings of affiliates	134,484	138,464	356,468
Income tax benefit (expense)	1,983	(35,844)	(73,353)
Equity in earnings of affiliates	10,779	7,256	15,440
Net income	147,246	109,876	298,555
Less: net income attributable to non-controlling interests	543	14,628	58,587
Net income attributable to Canadian Solar Inc.	146,703	95,248	239,968
Earnings per share — basic	\$ 2.46	\$ 1.55	\$ 3.73
Shares used in computation — basic	59,575,898	61,614,391	64,324,558
Earnings per share — diluted	\$ 2.38	\$ 1.46	\$ 3.44
Shares used in computation — diluted	62,306,819	68,872,102	71,183,135

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

CANADIAN SOLAR INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Years Ended December 31,		
	2020	2021	2022
Net income	147,246	(in thousands of U.S. Dollars) 109,876	298,555
Other comprehensive income (loss):			
Foreign currency translation adjustment	76,188	(26,296)	(150,127)
Gain on changes in fair value of available-for-sale debt securities, net of tax	—	—	904
Gain (loss) on interest rate swap, net of tax	(4,115)	59	716
De-recognition of interest rate swap, net of tax	10,724	—	—
Share of gain on changes in fair value of derivatives of affiliate, net of tax	—	—	3,754
Comprehensive income	230,043	83,639	153,802
Less: comprehensive income attributable to non-controlling interests	2,412	10,296	34,345
Comprehensive income attributable to Canadian Solar Inc.	227,631	73,343	119,457

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

CANADIAN SOLAR INC.
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

	Common Shares		Treasury Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Earnings Attributable to Canadian Solar Inc.	Non-Controlling Interests	Total Equity
	Number	\$	Number	\$						
(In Thousands of U.S. Dollars, except share data)										
Balance at December 31, 2019	59,371,684	703,806	609,516	(11,845)	17,179	793,601	(109,607)	1,393,134	31,924	1,425,058
Net income	—	—	—	—	—	146,703	—	146,703	543	147,246
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	—	76,188
Acquisition of non-controlling interest's ownership	—	—	—	—	(8,414)	—	74,319	(8,414)	—	(8,414)
Repurchase of common shares ⁽¹⁾	(381,330)	—	381,330	(5,963)	—	—	—	(5,963)	—	(5,963)
Retirement of treasury stock ⁽¹⁾	—	(17,808)	(990,846)	17,808	—	—	—	—	—	—
Share-based compensation	—	—	—	—	12,350	—	—	12,350	—	12,350
Exercise of share options and RSUs	830,030	1,035	—	—	—	—	—	1,035	—	1,035
Transfer of equity interest in subsidiaries to non-controlling shareholders ⁽²⁾	—	—	—	—	(49,351)	—	—	(49,351)	273,904	224,553
Proceeds from non-controlling interests	—	—	—	—	—	—	—	—	14,123	14,123
De-recognition of derivatives	—	—	—	—	—	—	10,724	10,724	—	10,724
Fair value change on derivatives	—	—	—	—	—	—	(4,115)	(4,115)	—	(4,115)
Balance at December 31, 2020	59,820,384	687,033	—	—	(28,236)	940,304	(28,679)	1,570,422	322,363	1,892,785
Net income	—	—	—	—	—	95,248	—	95,248	14,628	109,876
Foreign currency translation adjustment	—	—	—	—	—	—	—	—	—	(26,296)
Acquisition of non-controlling interest's ownership	—	—	—	—	—	—	(21,964)	(21,964)	(4,332)	(26,296)
Share-based compensation	—	—	—	—	8,808	—	—	8,808	(10,719)	(10,719)
Exercise of RSUs	562,376	—	—	—	—	—	—	—	—	8,808
Issuance of ordinary shares, net of issuance costs ⁽³⁾	3,639,918	148,510	—	—	—	—	—	148,510	—	148,510
Proceeds from non-controlling interests	—	—	—	—	—	—	—	—	10,003	10,003
Disposal of subsidiaries	—	—	—	—	—	—	—	—	(6,588)	(6,588)
Fair value change on derivatives	—	—	—	—	—	—	59	59	—	59
Balance at December 31, 2021	64,022,678	835,543	—	—	(19,428)	1,035,552	(50,584)	1,801,083	325,355	2,126,438
Net income	—	—	—	—	—	239,968	—	239,968	58,587	298,555
Foreign currency translation adjustment	—	—	—	—	—	—	—	(125,885)	(24,242)	(150,127)
Share-based compensation	—	—	—	—	9,370	—	—	9,370	—	9,370
Exercise of RSUs	483,377	—	—	—	—	—	—	—	—	904
Proceeds from non-controlling interests	—	—	—	—	—	—	—	—	2,529	2,529
Transfer of equity interest in subsidiary to non-controlling interest	—	—	—	—	11,185	—	544	11,729	4,094	15,823
Disposal of subsidiary	—	—	—	—	—	—	—	—	(1,268)	(1,268)
Fair value change of available-for-sale debt securities	—	—	—	—	—	—	904	904	—	904
Fair value change on derivatives	—	—	—	—	—	—	716	716	—	716
Share of fair value change on derivatives of affiliates	—	—	—	—	—	—	3,754	3,754	—	3,754
Balance at December 31, 2022	64,506,055	835,543	—	—	1,127	1,275,520	(170,551)	1,941,639	365,055	2,306,694

- Following the share repurchase plan authorized by the Board of Directors on December 9, 2019, the Company repurchased 91,424 and 289,906 outstanding shares with total costs of \$2,000 and \$3,963 in January 2020 and March 2020, respectively. The Company retired all outstanding shares repurchased during 2020.
- The Company completed capital raise of RMB1.78 billion (approximately \$261,332) for CSI Solar Co., Ltd. in 2020 to qualify it for the planned carve-out IPO in China and bring in leading institutional investors and strategic partners. Refer to Note 1 to the consolidated financial statements for further information.
- Represented proceeds from "at-the-market" offering of 3,639,918 shares of common shares in 2021, net of commissions and offering expenses of \$1,490.

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

CANADIAN SOLAR INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2020	2021	2022
	(In Thousands of U.S. Dollars)		
Operating activities:			
Net income	147,246	109,876	298,555
Adjustments to net income:			
Depreciation and amortization	209,118	282,769	234,559
Accretion of convertible notes	388	1,461	1,302
Loss (gain) on disposal of property, plant and equipment	(253)	83	(4,259)
Gain on disposal of solar power systems	—	(10,091)	—
Gain on disposal of investments in affiliates	(13,936)	(10,392)	—
Impairment loss of property, plant and equipment	11,854	6,084	60,330
Impairment loss of project assets	369	17,152	1,674
Impairment loss of investments in affiliates	24,060	—	357
Loss (gain) on change in fair value of derivatives, net	(50,001)	(23,785)	44,489
Equity in earnings of affiliates	(10,779)	(7,256)	(15,440)
Allowance for credit losses	9,874	7,615	5,773
Non-cash operating lease expenses	19,260	14,321	13,208
Write-down of inventories	42,907	14,070	7,475
Share-based compensation	12,350	8,808	9,370
Unrealized gain (loss) from sales to affiliates	(66)	35,890	5,971
Derecognition of interest rate swap	4,439	—	—
Deferred taxes	(21,439)	(67,386)	16,908
Changes in operating assets and liabilities:			
Accounts receivable trade	65,379	(284,785)	(357,276)
Accounts receivable, unbilled	(12,064)	(8,783)	(23,367)
Amounts due from related parties	26,828	(68,912)	(4,451)
Inventories	(180,974)	(518,741)	(406,343)
Value added tax recoverable	2,687	(21,873)	(43,881)
Advances to suppliers	(138,915)	(30,416)	(52,893)
Project assets	(443,730)	(73,375)	(302,839)
Prepaid expenses and other current assets	(72,188)	(85,754)	151,663
Other non-current assets	(11,913)	20,357	(17,350)
Accounts payable	(89,180)	11,023	351,535
Short-term notes payable	120,445	150,982	721,039
Amounts due to related parties	(9,773)	(171)	(54)
Other payables	10,386	126,215	(417)
Advances from customers	51,683	(53,998)	209,855
Operating lease liabilities	(18,917)	(14,156)	(14,160)
Other liabilities	160,768	51,248	68,492
Liability for uncertain tax positions	(623)	(7,281)	(1,718)
Net settlement of derivatives	33,054	31,886	(31,851)
Loss contingency accruals	1,115	(10,939)	(9,625)
Net cash provided by (used in) operating activities	(120,541)	(408,254)	916,631

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

CANADIAN SOLAR INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS – (Continued)

	Years Ended December 31,		
	2020	2021	2022
	(In Thousands of U.S. Dollars)		
Investing activities:			
Investments in affiliates	(17,758)	(54,004)	(19,355)
Return of capital from affiliates	—	2,671	7,083
Proceeds from disposal of investments in affiliates	33,037	14,311	—
Purchase of property, plant and equipment	(334,781)	(428,725)	(627,115)
Proceeds from disposal of property, plant and equipment	—	18,555	7,479
Purchase of solar power systems	(160)	(775)	(882)
Proceeds from disposal of solar power systems	—	18,397	2,302
Net cash used in investing activities	<u>(319,662)</u>	<u>(429,570)</u>	<u>(630,488)</u>
Financing activities:			
Proceeds from short-term borrowings	1,667,703	1,742,064	1,387,537
Repayment of short-term borrowings	(1,561,597)	(1,879,884)	(1,695,563)
Proceeds from long-term borrowings	207,632	588,082	770,368
Acquisition of non-controlling interests	—	(10,719)	—
Proceeds from non-controlling interests	261,332	10,003	15,109
Repayment to non-controlling interests	—	(6,588)	—
Net proceeds from issuance of common shares	—	148,510	—
Proceeds from (repayment of) third party financing liabilities	6,419	—	(29,595)
Proceeds from sales-leaseback arrangement	9,945	45,693	—
Repayments of finance lease obligation	(22,173)	(23,090)	(19,217)
Net proceeds from issuance of convertible notes	222,826	—	—
Proceeds from subscription of employee stock ownership plan	36,342	—	—
Proceeds from exercise of stock options	1,035	—	—
Payments for repurchase of common shares	(5,963)	—	—
Net cash provided by financing activities	<u>823,501</u>	<u>614,071</u>	<u>428,639</u>
Effect of exchange rate changes	50,997	18,320	(179,561)
Net increase (decrease) in cash, cash equivalents and restricted cash	434,295	(205,433)	535,221
Cash, cash equivalents and restricted cash at the beginning of the year	1,205,420	1,639,715	1,434,282
Cash, cash equivalents and restricted cash at the end of the year	<u>1,639,715</u>	<u>1,434,282</u>	<u>1,969,503</u>
Supplemental disclosure of cash flow information:			
Interest paid (net of amounts capitalized)	78,747	71,006	76,511
Income taxes paid, net of tax refund	38,193	57,396	77,400
Supplemental schedule of non-cash activities:			
Property, plant and equipment costs included in other payables	244,512	299,664	549,883

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the balance sheets that sum to the total of the same such amounts shown in the statements of cash flows.

	At December 31,	
	2021	2022
	(In Thousands of U.S. Dollars)	
Cash and cash equivalents	869,831	981,434
Restricted cash — current	560,633	978,116
Restricted cash — non-current	3,818	9,953
Total cash and cash equivalents, and restricted cash shown in the statements of cash flows	<u>1,434,282</u>	<u>1,969,503</u>

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

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

1. ORGANIZATION AND PRINCIPAL ACTIVITIES

Canadian Solar Inc. (“CSI”) was incorporated pursuant to the laws of the Province of Ontario in October 2001, and changed its jurisdiction by continuing under the Canadian federal corporate statute, the Canada Business Corporations Act, or CBCA, effective June 1, 2006. In July 2020, CSI filed articles of continuance to change its jurisdiction from the federal jurisdiction of Canada to the provincial jurisdiction of the Province of British Columbia. In July 2022, CSI completed its continuance from the corporate jurisdiction under the laws of the province of British Columbia to the corporate jurisdiction under the laws of the province of Ontario pursuant to the Business Corporations Act (Ontario), or OBCA. As a result, CSI is governed by the OBCA, and its affairs are governed by its notice of articles and the articles.

CSI and its subsidiaries (collectively, the “Company”) is one of the world’s largest solar technology and renewable energy companies, leading manufacturer of solar photovoltaic modules, provider of solar energy and battery storage solutions, and developer of utility-scale solar and battery storage projects. The Company’s geographic footprint is diversified, as its sales as well as development pipeline in various stages of development are located across North America, South America, Europe, South Africa, the Middle East, Australia and Asia.

In July 2020, the Company announced its plan to carve-out and publicly list its legacy Module and System Solutions (“MSS”) subsidiary, CSI Solar Co., Ltd., in China (“the IPO”). In preparation for the IPO, the Company successfully completed the restructuring of its business segments during the fourth quarter of 2020, and transferred China solar power system and project assets from CSI Solar to the Global Energy segment in November 2021 as part of the CSI Solar Co., Ltd. carve-out listing process. Refer to Note 22 for further information.

To qualify CSI Solar Co., Ltd. for the planned carve-out IPO and to bring in leading institutional investors and strategic partners (“third-party investors”), the Company completed a capital raise in 2020 by transferring a portion of CSI Solar Co., Ltd. shares to third-party investors for an aggregate consideration of RMB1.50 billion (approximately \$219,000 on the date of transaction), which was determined based on the equity value of CSI Solar Co., Ltd. of RMB7.50 billion (approximately \$1,100,000 on the date of transaction). At the same time, selected employees also purchased existing CSI Solar Co., Ltd. shares from the Company for an aggregated consideration of RMB31 million (approximately \$4,500 on the date of transaction) at the same price. Total proceeds of \$224,553 were fully received and recorded as non-controlling interests in subsidiaries on the consolidated balance sheets.

In addition, CSI Solar Co., Ltd. approved an employee incentive plan (the “ESOP scheme”) and utilized a limited liability partnership (the “LLP”) as a vehicle to hold CSI Solar Co., Ltd. shares that will be used under the ESOP scheme. Eligible CSI Solar Co., Ltd. directors and employees and board members have collectively agreed to subscribe to equity interest in the LLP for an aggregate of RMB248 million (\$36,342 on the date of transaction) at a discount of 30%, or at an equity valuation of RMB5.25 billion (approximately \$768,000 on the date of transaction), for which the vesting conditions include the successful completion of the IPO and service period. The related subscription advances of \$36,342 were fully received and recorded as other payables on the consolidated balance sheets. The ESOP scheme will be accounted for based on the grant date fair value which equals to the value of the discount benefited by the ESOP scheme participants. Compensation cost will be recognized over the vesting period upon and after completion of IPO, therefore, nil was recognized in the years ended December 31, 2020, 2021 and 2022.

As of December 31, 2021 and 2022, the third-party investors and Canadian Solar employees, in aggregate, owned 20.4% of CSI Solar Co., Ltd. The Company’s wholly-owned global project development business, its Global Energy segment, is not a part of the IPO transaction.

On March 21, 2023, the Company announced the approval of the IPO of CSI Solar Co., Ltd. by China Securities Regulatory Commission on the Science and Technology Innovation Board (the “STAR Market”) of the Shanghai Stock Exchange (the “SSE”).

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES

(a) Basis of presentation

The consolidated financial statements of the Company have been prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”).

(b) Basis of consolidation

The consolidated financial statements include the financial statements of the Company and its subsidiaries in which it has a controlling financial interest or variable interest entities (“VIEs”) for which the Company is a primary beneficiary. The permanent equity represented by third party or affiliate interest in non-wholly owned entities that the Company consolidates is shown as non-controlling interests in equity.

A controlling financial interest is typically determined when a company holds a majority of the voting equity interest in an entity, the non-controlling shareholder or partner do not hold substantive participating rights, redemption rights and no other conditions exist that would indicate that a company does not control the entity. All intercompany balances and transactions between the Company and its subsidiaries have been eliminated in consolidation.

The Company consolidates VIEs when the Company is the primary beneficiary. VIEs are entities that lack sufficient equity to finance their activities without additional financial support from other parties or whose equity holders, as a group, lack one or more of the following characteristics: (a) direct or indirect ability to make decisions; (b) obligation to absorb expected losses; or (c) right to receive expected residual returns. VIEs must be evaluated quantitatively and qualitatively to determine the primary beneficiary, which is the reporting entity that has (a) the power to direct activities of a VIE that most significantly impact the VIEs economic performance and (b) the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. The primary beneficiary is required to consolidate the VIE for financial reporting purposes. A VIE can have only one primary beneficiary, but may not have a primary beneficiary if no party meets the criteria described above.

When evaluating whether the Company is the primary beneficiary of a VIE, and must therefore consolidate the entity, the Company performs a qualitative analysis that considers the design of the VIE, the nature of its involvement and the variable interests held by other parties. If that evaluation is inconclusive as to which party absorbs a majority of the entity’s expected losses or residual returns, a quantitative analysis is performed to determine the primary beneficiary.

For the Company’s consolidated VIEs, the Company has presented in note 10, to the extent material, the assets of its consolidated VIEs that can only be used to settle specific obligations of the consolidated VIE, and the liabilities of its consolidated VIEs for which creditors do not have recourse to its general assets outside of the consolidated VIE, except for financial guarantee provided by the Company with respect to the debt obligations of the consolidated VIEs of \$5,912 and \$25,257 as of December 31, 2021 and 2022, respectively. All intercompany accounts and transactions between the Company and its consolidated VIEs have been eliminated in consolidation.

(c) Reclassifications

Certain prior period balances have been reclassified to conform to the current period presentation in the Company’s consolidated financial statements and the accompanying notes. Such reclassifications had no effect on previously reported results of operations or retained earnings.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(d) Use of estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates and assumptions that affect reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates under different assumptions or conditions. Significant accounting estimates reflected in the Company's consolidated financial statements include revenue recognition (including determination of the allocation of the transaction price, determination of deconsolidation of the project companies, estimates of total cost and estimates of variable consideration), allowance for credit losses on accounts receivable, advances to suppliers and other receivables, valuation of inventories and provision for firm purchase commitments, provision for contingent liability, impairment of long-lived assets and project assets, the estimated useful lives of long-lived assets, determination of assets retirement obligation ("ARO") associated with long-lived assets, discount rates used to measure operating lease liabilities, accrual for warranty and the recognition of the benefit from the purchased warranty insurance, fair value estimate of financial instruments including foreign exchange option and forward contracts and other types of derivative, accrual for uncertain tax positions, valuation allowances for deferred tax assets, applying acquisition method of accounting to business acquisitions and the grant-date fair value of share-based compensation awards and related forfeiture rates.

(e) Cash and cash equivalents and restricted cash

Cash and cash equivalents are stated at cost, which approximates fair value. Cash and cash equivalents consist of cash on hand, money market fund and demand deposits, which are unrestricted as to withdrawal and use, and have original maturities of three months or less when acquired.

Restricted cash represents amounts held by banks, which are not available for the Company's general use, as security for issuance of letters of credit, short-term notes payable and bank borrowings. Upon maturity of the letters of credit, repayment of short-term notes payable or bank borrowings, the deposits are released by the bank and become available for general use by the Company.

(f) Accounts receivable, unbilled

Accounts receivable, unbilled represents a contract asset for revenue that has been recognized in advance of billing the customer. The Company uses a cost-based input method to recognize revenue from battery storage solutions and EPC services when all relevant revenue recognition criteria have been met. Under this accounting method, revenue may be recognized in advance of billing the customer, which results in the recording of accounts receivable, unbilled. Once the Company meets the billing criteria under such contract, the rights to consideration becomes unconditional, it bills the customer and reclassifies the unbilled balance to accounts receivable trade. Billing requirements vary by contract, but are generally structured around completion of certain construction milestones.

(g) Allowance for credit losses

The Company's accounts receivable trade, advances to suppliers and other receivables are presented net of an allowance for credit losses. The Company establishes current expected credit losses ("CECL") through an assessment based on external credit rating, internal credit rating and historical loss rates of debtors. Where CECL is measured on a collective basis or caters for cases where evidence at the individual instrument level may not yet be available, the financial instruments are grouped on the aging status; and nature, size and industry of debtors.

The Company began purchasing credit insurance from insurers, such as the China Export & Credit Insurance Corporation and PICC Property and Casualty Company Limited, for certain of its accounts receivable trade in order to reduce its exposure to credit loss. The Company provides an allowance for accounts receivable trade considering factors such as historical collection experience, the age of the accounts receivable and other currently available evidence supporting recoverability. An allowance is recorded regardless of whether such account is covered by credit insurance. At the time the claim is made, the Company records a receivable from these insurers equal to the expected recovery up to the amount of the specific allowance. The Company had recorded a receivable from these insurers in prepaid expenses and other current assets of \$1,409 and \$1,873 as of December 31, 2021 and 2022, respectively and a corresponding reduction in general and administrative expenses.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(h) Advances to suppliers

The Company makes prepayments to certain suppliers and such amounts are recorded in advances to suppliers in the consolidated balance sheets. Advances to suppliers expected to be utilized within twelve months as of each balance sheet date are recorded as current assets and the portion expected to be utilized after twelve months are classified as non-current assets in the consolidated balance sheets.

(i) Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined by the weighted-average method. Cost of inventories consists of direct materials and, where applicable, direct labor costs, tolling costs and those overhead costs that have been incurred in bringing the inventories to their present location and condition.

Adjustments are recorded to write down the cost of obsolete and excess inventories to the estimated net realizable value based on historical and forecast demand.

(j) Project assets

Project assets consist primarily of capitalized costs relating to solar and battery storage projects in various stages of development prior to the intended sale of the solar and battery storage projects. These costs include certain acquisition costs, land costs and costs for developing and constructing a solar and battery storage project. Development costs can include legal, consulting, permitting, and other similar costs. Construction costs can include execution of field construction, installation of solar equipment, solar modules, batteries storage, inverters, energy stations, power plant controllers and related equipment. Interest costs incurred on debt during the construction phase, all deferred financing costs amortized during the construction phase, and indirect project costs are also capitalized within project assets.

Solar and battery storage projects are classified as project assets unless the Company has intention not to sell them to third parties. In that case, these projects that the Company intends to hold and operate to generate income from the sale or storage of electricity are classified as solar power systems on the consolidated balance sheets. During the development phase, the Company capitalizes costs of the solar and battery storage projects as guided by ASC 970. The costs to develop or construct solar and battery storage projects are presented as operating activities or investing activities in the consolidated statement of cash flows, if they are related to project assets or solar power systems, respectively. While the solar and battery storage projects are in the development phase, they are generally classified as non-current assets, unless it is anticipated that the sale will occur within one year. Appropriateness of the classification of the solar and battery storage projects is assessed based on the circumstances on each balance sheet date. Solar and battery storage projects that the Company intends to sell within one year are classified as project assets-current.

The Company reviews project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. The Company considers a fully developed or constructed project commercially viable or recoverable if it is anticipated to be sold for a profit. Otherwise, the Company considers the project commercially viable or recoverable if the anticipated selling price is higher than the carrying value of the related project assets. The Company examines a number of factors to determine if the project will be recoverable, the most notable of which include whether there are any changes in environmental, permitting, grid interconnection, capital cost, market pricing or regulatory conditions that impact the project. Such changes could cause the costs of the project to increase or the selling price of the project to decrease. If a project is not considered recoverable, the Company impairs the project asset and adjusts the carrying value to the estimated recoverable amount, with the resulting impairment recorded within cost of revenues in the consolidated statements of operations.

Project assets are often held in separate legal entities and VIEs which are formed for the special purpose of constructing the project assets, which the Company refers to as "project companies". The Company consolidates project companies as described in note 2(b) above.

The Company does not depreciate the project assets. Any revenue generated from a solar and battery storage power system connected to the grid would be considered incidental revenue and accounted for as a reduction of the capitalized project costs for development. If circumstances change, and the Company intends to operate the project assets for the purpose of generating income from the sale or storage of electricity, the project assets will be reclassified to solar and battery storage power systems at the lower of their carrying amounts, adjusted for any depreciation expense that would have been recognized had the project assets been continuously classified as held and used, or fair value at the date of the subsequent decision not to sell.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(k) 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. These costs typically include transaction and integration costs, such as legal, accounting, and other professional fees. The Company recognizes adjustments to provisional amounts to reflect additional information obtained for incomplete facts and circumstances as of acquisition date. The measurement period ends once the Company receives sufficient information to finalize fair value, however, the period will not exceed 1 year from the acquisition date.

(l) Assets 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 non cash assets, liabilities incurred, or equity interests issued), measurement is based on either the cost to the acquiring entity or the fair value of the assets (or net assets) acquired, whichever is more clearly evident and, thus, more reliably measurable. The cost of a group of assets acquired in an asset acquisition is allocated to the individual assets acquired or liabilities assumed based on their relative fair value and does not give rise to goodwill.

(m) Property, plant and equipment

Property, plant and equipment is recorded at cost less accumulated depreciation. The cost of property, plant and equipment comprises its purchase price and any directly attributable costs, including interest costs capitalized during the period the asset is brought to its working condition and location for its intended use. The Company expenses repair and maintenance costs as incurred.

Depreciation is computed on a straight-line basis over the following estimated useful lives:

Buildings	20 years
Leasehold improvements	Over the shorter of the lease term or their estimated useful lives
Machinery	5-10 years
Furniture, fixtures and equipment	5 years
Motor vehicles	5 years

Costs incurred in constructing new facilities, including progress payments, capitalized interests and other costs relating to the construction, are capitalized and transferred to property, plant and equipment on completion and depreciation commences from that time.

For property, plant and equipment that has been placed into service, but is subsequently idled temporarily, the Company continues to record depreciation expense during the idle period. The Company adjusts the estimated useful life of the idled assets if the estimated useful life has changed.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(n) Solar power systems

Solar power systems generally comprised of ground-mounted utility-scale projects that the Company intends to hold for use. The solar power systems are stated at cost less accumulated depreciation. The cost consists primarily of direct costs incurred in various stages of development prior to the commencement of operations. For a self-developed solar power system, the actual cost capitalized is the amount of the expenditure incurred for the application of the power purchase agreements (“PPA”) and performance based energy incentives, permits, consents, construction costs, equipment costs, land costs, interest costs capitalized, and other costs capitalized. Expenditures for major additions and improvements are capitalized and minor replacements, maintenance, and repairs are charged to expense as incurred.

When solar power systems are retired, or otherwise disposed of, the cost and accumulated depreciation is removed from the balance sheets and any resulting gain or loss is included in the results of operations for the respective period. Depreciation is recognized using the straight-line method over the estimated useful lives of the solar power systems.

The Company reviews the estimated useful lives of its fixed assets on an ongoing basis. This review indicated that the actual lives of certain solar power systems were longer than the estimated useful lives used for depreciation purposes in the Company’s financial statements. As a result, effective January 1, 2022, the Company changed the estimates of its useful lives of its solar power systems from 20-25 years to 30 years, based on internal studies and market analysis that support a 30-year useful life as appropriate given advances in solar power technology. The useful life was not changed for projects to be transferred to an offtaker at the end of a PPA that is less than 30 years in duration. The change was being accounted for prospectively as a change in accounting estimate. Depreciation expense for the year ended December 31, 2021 would have been lowered by \$2,186 if the change had been made at the beginning of 2021.

(o) Intangible assets

Intangible assets primarily represent the technical know-how and computer software purchased from third parties. Intangible assets are recorded at fair value at the time of acquisition less accumulated amortization, if applicable. Amortization is recorded according to the following table on a straight-line basis for all intangible assets:

Technical know-how	10 years
Computer software	1-10 years

(p) Land use rights

Land use rights represent operating leases in accordance with ASC 842. The amounts paid for the use right of lands located in China (“PRC”) is recorded as operating lease right-of-use (“ROU”) assets on the consolidated balance sheets. Amounts are charged to earnings ratably over the land use right periods of generally 50 years.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(q) Investments in affiliates

The Company uses the equity method of accounting for the investments. The Company records the equity method investments at historical cost and subsequently adjusts the carrying amount each period for share of the earnings or losses of the investee and other adjustments required by the equity method of accounting. Dividends received from the equity method investments are recorded as reductions in the cost of such investments. The amount associated with the share of earnings is considered as return on capital, and the rest of the amount is considered as return of capital.

Investments are evaluated for impairment when facts or circumstances indicate that the fair value of the investment is less than its carrying value. An impairment is recognized when a decline in fair value is determined to be other-than-temporary. The Company reviews several factors to determine whether a loss is other-than-temporary. These factors include, but are not limited to, the: (i) nature of the investment; (ii) cause and duration of the impairment; (iii) extent to which fair value is less than cost; (iv) financial conditions and near term prospects of the affiliates; and (v) ability to hold the security for a period of time sufficient to allow for any anticipated recovery in fair value. During the years ended December 31, 2020, 2021 and 2022, the Company recorded \$24,060, nil and \$357 of impairment charges on its investments, respectively.

(r) Impairment of long-lived assets

The Company assesses the recoverability of the carrying value of long-lived assets, including property, plant and equipment, non-current project assets, solar power systems, and intangible assets, when an indicator of impairment has been identified. The Company reviews the long-lived assets each reporting period to assess whether impairment indicators are present. For purposes of recognition and measurement of an impairment loss, a long-lived asset or assets is grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. For long-lived assets, when impairment indicators are present, the Company compares undiscounted future cash flows, including the eventual disposition of the asset group at market value, to the asset group's carrying value to determine if the asset group is recoverable. Assessments also consider changes in asset group utilization, including the temporary idling of capacity and the expected timing of placing this capacity back into production. If the sum of the expected undiscounted cash flows is less than the carrying amount of the assets, the Company will recognize an impairment loss for amount by which the carrying amount of the assets exceeds its fair value. Fair value is generally measured based on either quoted market prices, if available, or discounted cash flow analyses. The Company recorded impairment charges for long-lived assets of \$11,854, \$6,084 and \$60,330 for the years ended December 31, 2020, 2021 and 2022, respectively.

(s) Interest capitalization

The Company capitalizes interest costs as part of the historical costs of acquiring or constructing certain assets during the period of time required to get the assets ready for their intended use or sale to a customer. The Company capitalizes interest costs to the extent that expenditures to acquire, construct, or develop an asset have occurred and interest costs have been incurred. Interest capitalized for property, plant and equipment, or solar power systems is depreciated over the estimated useful life of the related asset, as the qualifying asset is placed into service. The interest capitalized for project assets forms part of the cost of revenues when such project assets are sold and all revenue recognition criteria are met. Interest capitalization ceases once a project is substantially complete or no longer undergoing construction activities to prepare it for its intended use.

(t) Assets retirement obligation

Certain jurisdictions in which the Company's long-lived assets are located or certain land lease agreements require the removal of the solar power systems when the project is decommissioned. The Company recognizes the fair value of a liability for an assets retirement obligation ("ARO") in the period in which the obligation is incurred and a reasonable estimate of fair value can be made. Upon initial recognition of a liability for an ARO, the asset retirement cost is capitalized by increasing the carrying amount of the related long-lived asset by the same amount. Over time, the liability is accreted to its expected future value, while the capitalized cost is depreciated over the useful life of the related asset, except in cases where the asset is depreciated over lease terms that differ from its useful life. Upon settlement of the obligation, the Company eliminates the liability and, based on actual cost to retire, may incur a gain or loss. The Company's ARO included in solar power systems were \$110 and \$399 as of December 31, 2021 and 2022, respectively.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(u) Leases

The Company determines if an arrangement is a lease at inception based on the relevant facts and circumstances. Operating leases are included in operating lease ROU assets and operating lease liabilities on the consolidated balance sheets. Finance leases are included in property, plant and equipment, other payables and other non-current liabilities on the consolidated balance sheets. ROU assets represent the right to use an underlying asset for the lease term and lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and lease liabilities are calculated as the present value of the lease payments not yet paid. Variable lease payments are excluded from the ROU asset and lease liability calculations and are recognized in the period in which the obligations for those payments are incurred. Operating lease ROU assets also include any lease prepayments made, initial direct costs and deferred rent if any and exclude lease incentives. As the rate implicit in the Company's operating leases is not typically readily available, the Company uses an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. Some of the Company's lease agreements include options to extend or terminate the lease, which are not included in its minimum lease terms unless they are reasonably certain to be exercised. All operating lease expenses are fixed, which are accounted for on a straight-line basis over the lease term and that of finance lease include interest and amortization expenses incurred during the current year.

Lease liabilities that become due within one year of the balance sheet date are classified as current liabilities.

The Company's leases do not contain any material residual value guarantees or material restrictive covenants. Leases with an initial lease term of 12 months or less and do not include a purchase option or extension that is reasonably certain to be exercised are not recorded on the consolidated balance sheets, and instead the lease expense is recognized on a straight-line basis over the term of the lease.

For finance leases, the amortization of the asset is recognized over the shorter of the lease term or useful life of the underlying asset within depreciation and amortization expense in the Company's consolidated statements of operations. The interest expense related to finance leases, including any variable lease payments, is recognized in interest expense in its consolidated statements of operations.

The Company assesses ROU assets for impairment quarterly. When events or circumstances indicate the carrying value may not be recoverable, the Company evaluates the net book value of the asset for impairment by comparison to the projected undiscounted future cash flows. If the carrying value of the asset is determined to not be recoverable and is in excess of the estimated fair value, the Company recognizes an impairment loss on its consolidated statements of operations.

(v) 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 the amount 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.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(w) Income taxes

Deferred income taxes are recognized for temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements, net tax loss carry-forwards and credits using the enacted tax rates expected to apply to taxable income in the periods in which the deferred tax liability or asset is expected to be settled or realized. Deferred tax assets are reduced by a valuation allowance when it is more likely than not that some portion or all of the deferred tax assets will not be realized. Current income taxes are provided for in accordance with the laws of the relevant taxing authorities.

Income tax expense includes (i) deferred tax expense, which generally represents the net change in the deferred tax asset or liability balance during the year plus any change in valuation allowances; (ii) current tax expense, which represents the amount of tax payable to or receivable from a taxing authority; and (iii) non-current tax expense, which represents the increases and decreases in amounts related to uncertain tax positions from prior periods and not settled with cash or other tax attributes. The Company only recognizes tax benefits related to uncertain tax positions when such positions are more likely than not of being sustained upon examination. For such positions, the amount of tax benefit that the Company recognizes is the largest amount of tax benefit that is more than fifty percent likely of being sustained upon the ultimate settlement of such uncertain tax position. The Company records penalties and interests associated with the uncertain tax positions as a component of income tax expense.

The Company uses the flow-through method to account for investment tax credits earned on qualifying projects placed into service. Under this method the investment tax credits are recognized as a reduction to income tax expense in the year the credit arises. The use of the flow-through method also results in a basis difference from the recognition of a deferred tax liability and an immediate income tax expense for reduced future tax depreciation of the related assets. Such basis differences are accounted for pursuant to the income statement method.

(x) Revenue recognition

The Company recognizes revenue when it satisfies a performance obligation by transferring a promised good or service to a customer. The Company is subjected to sales taxes, goods and services taxes and value added taxes on its sales of products, and recognizes revenue net of these taxes and estimated returns.

Solar power products

Solar power products, including solar modules, solar system kits, inverters, accessories and materials related to solar power products are transferred at a point in time when the customers obtain control of the products, which is typically upon shipment or delivery depending on the contract terms. Revenues of solar product sales also include charges to customers for shipping and handling activities. Sales agreements typically contain the assurance-type customary product warranties but do not contain any post-shipment obligations nor any return or credit provisions, see note 2 (ab) for the Company's accounting policy for warranty.

The Company assessed whether it is probable that the Company will collect substantially all of the consideration to which it will be entitled in exchange for the products that will be transferred to the customers. The delivered products remain as inventories on consolidated balance sheets, regardless of whether the control has been transferred. If the collection of payment becomes probable in the future, the Company would then recognize revenue, adjust inventories and recognize cost of revenues.

Battery storage solutions and EPC services

The Company recognizes revenue for the sales of battery storage solutions (system integration solutions, delivering turnkey battery storage technology solutions) and EPC services over time based on the estimated progress to completion using a cost-based input method. This includes the advances that battery storage customers are required to make on the value of their battery storage solution that is treated as deferred revenue on the Company's consolidated balance sheet and then recognized as revenue over time based on the estimated progress to completion.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(x) Revenue recognition (Continued)

In applying the cost-based input method of revenue recognition, the Company uses the actual costs incurred relative to the total estimated costs to determine its progress towards contract completion and to calculate the corresponding amount of revenue to recognize. The Company is also required to make estimates of revenues and costs to complete its projects. In making such estimates, significant judgment is required to evaluate the underlying assumptions, including the impact of any performance incentives, liquidated damages, and other payments to customers. If estimated total costs of any contract are greater than the estimated net revenues of the contract, the Company recognizes the entire estimated loss in the period the loss becomes known. The cumulative effect of revisions to estimates using the cost-based input method of revenue recognition are recorded in the period in which the revisions are identified. At the inception of each contract that includes variable consideration, the Company evaluates the amount of potential payment and the likelihood that the payments will be received. The Company utilizes either the most likely amount method or expected value method to estimate the amount expected to be received based on which method best predicts the amount expected to be received. The contracts do not contain significant financing component.

Performance obligation for long term service contract, including capacity, operating system performance and battery augmentation, is accounted for separately if the performance obligation is considered to be distinct. The Company considers the performance obligation to be distinct if the customer can benefit from the good or service either on its own or together with other resources readily available to the customer, and the Company's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract. The Company generally allocates the transaction price to each performance obligation based on a relative standalone selling price basis. The Company develops assumptions that require judgment to determine the standalone selling price for each performance obligation in consideration of applicable market conditions, relevant entity-specific factors and information about the customer.

Solar and battery storage projects

Sales of solar power projects and battery storage power projects (project development activities, including sourcing land, interconnection, structuring power purchase agreements, obtaining permits and other requirements) are recognized at a point in time when customers obtain control of solar power or battery storage projects. For sales of solar and battery storage projects in which the Company obtains an interest in the project sold to the customers, the Company recognizes all of the revenue for the consideration received, including the fair value of the non-controlling interest it obtained, and defer any profit associated with the interest obtained.

The solar and battery storage projects are often held in separate legal entities, trusts or investment funds which are formed for the special purpose of constructing the solar and battery storage projects, which the Company refers to as "project companies". The Company applies guidance under ASC 810 to determine deconsolidation of the project companies upon transfer of equity interest to the customers, and then applies guidance under ASC 606 to identify performance obligations, and to estimate the variable consideration, if any, as part of the transaction price for revenue recognition.

Operations and Maintenance ("O&M") and asset management services

O&M and asset management services are transferred over time when customers receive and consume the benefits provided by the Company's performance under the terms of service arrangements. Revenues from O&M and asset management services are recognized over time based on the work completed to date which does not require re-performance and the costs of O&M and asset management services are expensed when incurred.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(x) Revenue recognition (Continued)

Electricity revenue

Electricity revenue is generated primarily by the Company's solar power plants under long-term PPAs and performance based energy incentives. For electricity sold under PPAs, the Company generally recognizes electricity revenue based on the price stated in the PPAs when the specific volume of electricity has been generated and transmitted to the grid. Performance-based energy incentives are awarded under certain state programs for the delivery of renewable electricity when the attached conditions have been met and there is reasonable assurance that the incentives will be received. During the years ended December 31, 2020, 2021 and 2022, the Company recognized performance-based energy incentives related to electricity generated of \$6,628, \$9,402 and \$2,908, respectively, in revenue. The Company will evaluate its long-term PPAs to determine whether the PPAs should be accounted for as an operating lease. A lease is deemed to exist when a single off-taker has the ability or right to operate the solar power plant, control physical access, or is entitled to obtain substantially all the output from the facility. Variable lease payment is recognized over the term of lease as contingent rent revenue when output is delivered, whereas fixed lease payment is recognized as lease revenue on a straight-line basis over the lease term.

The Company's electricity revenue during the years ended December 31, 2020, 2021 and 2022 were as follows:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
Electricity Revenue:			
CSI Solar Segment	9,077	15,302	2,256
Global Energy Segment	629	14,118	21,579
	<u>9,706</u>	<u>29,420</u>	<u>23,835</u>

The Company determined that certain PPAs are operating leases and as a result, recognizes revenue as contingent rental revenue when output is delivered. Such revenue, which is presented as electricity revenue above, amounted to \$2,457, \$4,940 and \$4,736 for the years ended December 31, 2020, 2021 and 2022, respectively. The remaining amounts of \$7,249, \$24,480 and \$19,099 for the years ended December 31, 2020, 2021 and 2022, respectively, are recorded in accordance with ASC 606.

Disaggregation of Revenue

The disaggregation of revenue from contracts with customers for the years ended December 31, 2020, 2021 and 2022 has been disclosed under Segment Information. See Note 22 for details of revenues generated from each product or service and revenues generated from different geographic locations.

The following table represents a disaggregation of revenue recognized at a point in time or over time:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
CSI Solar Segment:			
Revenue recognized at a point in time	2,704,332	3,881,573	6,173,338
Revenue recognized over time	45,996	271,513	473,747
Global Energy Segment:			
Revenue recognized at a point in time	687,759	1,068,179	763,698
Revenue recognized over time	38,408	55,904	57,827
	<u>3,476,495</u>	<u>5,277,169</u>	<u>7,468,610</u>

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(x) Revenue recognition (Continued)

For the year ended December 31, 2022, \$219,836 of the Company's revenue was recognized from the beginning balance of contract liabilities as of January 1, 2022. Contract liabilities of \$406,751 as of December 31, 2022 are expected to be realized within one year.

The Company's contract assets and liabilities are as follow:

	At December 31, 2021 \$	At December 31, 2022 \$
Contract Assets		
Accounts receivable, unbilled	37,244	57,770
Contract Liabilities		
Advances from customers	135,512	334,943
Other current liabilities	98,494	71,808
	<u>234,006</u>	<u>406,751</u>

The Company has applied the practical expedient by accounting for contracts (or performance obligations) with similar characteristics on a portfolio basis. The Company does not expect that the effects on the financial statements of applying the revenue recognition guidance to the portfolio would differ materially from applying the guidance to the individual contracts (or performance obligations) within that portfolio.

The Company does not assess whether promised products are performance obligations if they are immaterial in the context of the contract with the customer. If the revenue related to a performance obligation that includes products that are immaterial in the context of the contract is recognized before those immaterial products are transferred to the customer, then the related costs to transfer those products are accrued.

The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed. Revenue recognized in years ended December 31, 2021 and 2022 from performance obligations satisfied in prior periods were insignificant.

The Company generally expenses incremental costs of obtaining a contract when incurred because the amortization period would be less than one year. The incremental costs are recorded in operating expense. Incremental costs of obtaining a contract with an amortization period of more than one year are not material to the Company.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(y) Shipping and handling

Payments received from customers for shipping and handling activities are included in net revenues. Shipping and handling costs relating to sales of 134,248, \$316,358 and \$453,865, are included in selling and distribution expenses for the years ended December 31, 2020, 2021 and 2022, respectively.

(z) Research and development

Costs related to the design, development, testing and enhancement of products are included in research and development expenses. Research and development costs are expensed when incurred and amounted to \$45,167, \$58,407 and \$69,822 for the years ended December 31, 2020, 2021 and 2022, respectively.

(aa) Other operating income, net

Other operating income, net primarily consists of gains or losses on disposal of solar power systems and property, plant and equipment, government grants received and insurance claims on weather-related project damages.

Government grants primarily consist of unrestricted and restricted grants and subsidies. Unrestricted grants received that allowed the Company's full discretion in utilizing the funds are recognized as other operating income when it is probable that all the conditions stipulated by the local governments, generally for operating a business in their jurisdictions and compliance with specific policies promoted by the local governments, have been satisfied. Restricted grants received that are related to land use rights, property, plants and equipment and certain projects, are recorded as deferred subsidies in other non-current liabilities and are amortized on a straight-line basis over the term of related assets.

In most cases, the attached conditions of grants are for a specific performance or duration related to the construction and acquisition of property, plant and equipment, achievement of business development plan, technology innovation, and human capital development. These conditions may be subject to review, audit and approval by the local government authorities and, therefore, could be different from the amounts recorded.

As of December 31, 2022, the Company has \$786 and \$165,946 of government grants in other current liabilities and other non-current liabilities, respectively.

The following table summarizes the Company's other operating income, net:

	Years Ended December 31,		
	2020	2021	2022
	\$	\$	\$
Government grants	(24,245)	(38,468)	(59,543)
Net (gain) loss on disposal of property, plant and equipment	(253)	83	(4,259)
Net gain on disposal of solar power system	—	(10,091)	—
(Insurance claims on) weather-related project damages	(1,025)	1,408	—
	<u>(25,523)</u>	<u>(47,068)</u>	<u>(63,802)</u>

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ab) Warranty cost

Before 2009, the Company sold its standard solar modules typically with a two-year guarantee for defects in materials and workmanship and a 10-year and 25-year warranty against declines of more than 10% and 20%, respectively, from the initial minimum power generation capacity at the time of delivery. In 2009, the Company increased its guarantee for defects in materials and workmanship to six years. In 2011, the Company increased its guarantee for defects in materials and workmanship to ten years. In 2019, the Company increased its guarantee for defects in materials and workmanship up to 12 years. In 2022, the Company increased its guarantee for defects in materials and workmanship up to 15 years or 25 years for certain module types, and the Company warrant that, for a period of 25 years, its Ku/Hiku modules will maintain the following performance levels: (i) during the first year, the actual power output of the module will be no less than 97.5% of the labeled power output; (ii) from the second year to the 25th year, the actual annual power output decline of the module will be no more than 0.55%; and (iii) by the end of the 25th year, the actual power output of the module will be no less than 84.8% of the labeled power output. The Company has provided warranty against decline in performance for its bifacial module and double glass module products for a period of 30 years.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ab) Warranty cost (Continued)

The Company maintains warranty reserves to cover potential liabilities that could arise under these guarantees and warranties. Due to limited warranty claims to date, the Company accrues the estimated warranty costs based on an assessment of its competitors' and its own actual claim history, industry-standard accelerated testing, estimates of failure rates from the Company's quality review, and other assumptions that the Company believes to be reasonable under the circumstances. Actual warranty costs are accumulated and charged against the accrued warranty liability. To the extent that accrual for warranty costs differs from the estimates, the Company will prospectively revise its accrual rate. The Company currently records a 1% warranty provision against the revenue from sales of solar module products.

The Company warrants its battery storage products for a specific amount of time against performance or manufacturing defects. The warranty is typically for an initial term of 5 years from the date of installation, with an option for annual extensions for an additional 15 years. The Company continuously monitors its warranty failures and maintains a reserve for the related warranty expenses based on various factors, including historical warranty claims, results of field monitoring, vendor reliability estimates, and data on industry averages for similar products. Estimates related to the outstanding warranty liability are re-evaluated on an ongoing basis using best-available information and revisions are made as necessary. The Company has obtained warranties from its battery cell suppliers to back up a portion of its warranties.

For solar power projects built by the Company under EPC services, the Company provides a limited workmanship or balance of system warranty against defects in engineering design, installation and construction under normal use, operation and service conditions generally for a period of two years following the energizing of the solar power project. In resolving claims under the workmanship or balance of system warranty, the Company has the option of remedying through repair, refurbishment or replacement of equipment. The Company has entered into similar workmanship warranties with its suppliers to back up a portion of its warranties.

The Company has entered into agreements with a group of insurance companies with high credit ratings to back up a portion of its warranties on solar module products. The insurance companies are obliged to reimburse the Company, subject to certain maximum claim limits and certain deductibles, for the actual product warranty costs that the Company incurs under the terms of its solar module product warranty policy. The Company records the insurance premiums initially as prepaid expenses and amortizes them over the respective policy periods. The unamortized carrying amount is \$528 and \$264 as of December 31, 2021 and 2022, respectively, and was included as a component of prepaid expenses and other current assets.

The warranty obligations the Company records relate to defects that existed when the product was sold to the customer. The event which the Company is insured against through its insurance policies is the sale of products with these defects. Accordingly, the Company views the insured losses attributable to the shipment of defective products covered under its warranty as analogous to potential claims, or claims that have been incurred as of the product ship date, but not yet reported. The Company expects to recover all or a portion of the cost of its obligations with respect to the defective products through insurance claims. Therefore, the Company's accounting policy is to record an asset for the amount determined to be probable of recovery from the insurance claims (not to exceed the amount of the total losses incurred), consistent with the guidance set forth at ASC 410-30.

The Company considers the following factors in determining whether an insurance receivable that is probable and recoverability can be reasonably estimated: (i) reputation and credit rating of the insurance company; (ii) comparison of the solar module product warranty policy against the terms of the insurance policies, to ensure valid warranty claims submitted by customers will be covered by the policy and therefore reimbursable by the insurance companies; and (iii) with respect to specific claims submitted, written communications from the insurance companies are monitored to ensure the claim has been submitted to the insurance companies, and reimbursements are probable to be subsequently collected. The successfully processed claims provide further evidence that the insurance policies are functioning as anticipated.

To the extent uncertainties regarding the solvency of insurance carriers or the legal sufficiency of insurance claims (including if they became subject to litigation) were to arise, the Company will establish a provision for uncollectible amounts based on the specific facts and circumstances, and the measurement of expected credit losses. To date, no provision has been determined to be necessary. In addition, to the extent that accrual for warranty costs differs from the estimates or the Company prospectively changes its accrual rate, this change may result in a change to the amount expected to be recovered from insurance.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ab) Warranty cost (Continued)

As the warranty obligation and related recovery asset do not meet the criteria for offsetting, the gross amounts are reported in the Company's consolidated balance sheets. The asset is expected to be realized over the life of the warranty obligation as described above and is treated as a non-current asset consistent with the underlying warranty obligation. When a specific claim is submitted, and the corresponding insurance proceeds are expected to be collected within twelve months of the balance sheet date, the Company will reclassify that portion of the receivable as being current. The insurance receivable amounts were \$87,729 and \$84,474 as of December 31, 2021 and 2022, respectively, and were included as a component of other non-current assets.

The Company made upward adjustments to its accrued warranty costs of \$4,089 for the year ended December 31, 2022, to reflect the increase in average selling price of solar modules as well as the volume increase in solar modules shipment, which are two primary inputs into the estimated warranty costs. Accrued warranty costs, net effect of adjustments, of \$26,931, \$45,053 and \$68,411 are included in cost of revenues for the years ended December 31, 2020, 2021 and 2022, respectively.

(ac) Foreign currency translation

The United States dollars ("U.S. dollars" or "\$"), the currency in which a substantial amount of the Company's transactions are denominated, is used as the functional and reporting currency of CSI. Monetary assets and liabilities denominated in currencies other than the U.S. dollars are translated into U.S. dollars at the rates of exchange ruling at the balance sheet date. Transactions in currencies other than the U.S. dollars during the year are converted into the U.S. dollars at the applicable rates of exchange prevailing on the transaction date. Transaction gains and losses are recognized in the consolidated statements of operations. Gains and losses on intra-entity foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future) between consolidated entities are not recognized in earnings, but are included as a component of other comprehensive income.

The financial records of certain of the Company's subsidiaries are maintained in local currencies other than the U.S. dollars, such as Renminbi ("RMB"), Euros, Canadian dollars ("CAD"), Japanese yen, Brazilian reals ("BRL") and Australian dollars, which are their functional currencies. Assets and liabilities are translated at the exchange rates at the balance sheet date, equity accounts are translated at historical exchange rates and revenues, expenses, gains and losses are translated using the average rate for the year. Translation adjustments are reported as foreign currency translation adjustment and are shown as a separate component of other comprehensive income in the statements of comprehensive income.

(ad) Comprehensive income

Comprehensive income includes all changes in equity except those resulting from investments by owners and distributions to owners. For the years presented, total comprehensive income included (i) net income, (ii) foreign currency translation adjustments, including gains and losses on intra-entity foreign currency transactions that are of a long-term-investment nature (that is, settlement is not planned or anticipated in the foreseeable future) between consolidated entities, (iii) the unrealized gains or losses (effective portion) on and de-recognition of derivative instruments that qualify for and have been designated as cash flow hedges and (iv) unrealized gains or losses in fair value of available-for-sale debt securities.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ae) Foreign currency risk

The majority of the Company's sales in 2020, 2021 and 2022 were denominated in U.S. dollars, Renminbi and Euros, with the remainder in other currencies such as Japanese Yen, Brazilian reals, Australian dollars, South African rand and British pounds. The Company's Renminbi costs and expenses are primarily related to the sourcing of solar cells, silicon wafers and silicon, other raw materials, such as PV glass and aluminum, labor costs and local overhead expenses within the PRC. From time to time, the Company enters into loan arrangements with commercial banks that are denominated primarily in Renminbi, U.S. dollars, Japanese yen, Brazilian reals and Euros. Most of its cash and cash equivalents and restricted cash are denominated in Renminbi and U.S. dollars. Fluctuations in exchange rates, particularly between the U.S. dollars, Renminbi, Canadian dollars, Japanese yen, Euros, Brazilian reals, South African rand and Thai baht, may result in foreign exchange gains or losses. The Company has hedged part of its foreign currency exposures primarily against the U.S. dollars using foreign currency forward or option contracts.

(af) Concentration of credit risk

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents, restricted cash, accounts receivable, advances to suppliers and amounts due from related parties.

All of the Company's cash and cash equivalents are held with financial institutions that Company management believes to have high credit quality.

The Company conducts credit evaluations of customers and generally does not require collateral or other security from its customers. The Company establishes an allowance for credit losses primarily based upon the age of the receivables and factors surrounding the credit risk of specific customers. With respect to advances to suppliers, such suppliers are primarily suppliers of raw materials and equipment. The Company performs ongoing credit evaluations of its suppliers' financial conditions. The Company generally does not require collateral or security against advances to suppliers, however, it maintains a reserve for potential credit losses and such losses have historically been within management's expectation.

The prepayments made by the Company are unsecured and expose the Company to supplier credit risk. As of December 31, 2021 and 2022, gross prepayments made to individual suppliers in excess of 10% of total advances to suppliers are as follows:

	As of December 31,	
	2021	2022
Supplier A	\$ 37,117	\$ 35,359
Supplier B	52,257	— (1)
Supplier C	36,026	— (1)

(1) Not in excess of 10% of total advances to suppliers as of December 31, 2022.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ag) Fair value of financial instruments

The Company applies authoritative guidance for fair value measurements for its financial assets and liabilities. The guidance defines fair value as an exit price representing the amount that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. The guidance also establishes a fair value hierarchy, which prioritizes the inputs used in measuring fair value. The standard describes three levels of inputs that may be used to measure fair value:

Level 1—Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets. The Company's money market fund included in cash equivalent, restricted cash balance, mutual funds to satisfy its obligations under its employee deferred compensation plan and listed equity securities for all periods presented uses level one fair value inputs.

Level 2—Inputs reflect quoted prices for identical assets or liabilities in markets that are not active; quoted prices for similar assets or liabilities in active markets; inputs other than quoted prices that are observable for the assets or liabilities; or inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3—Unobservable inputs reflecting the Company's own assumptions incorporated in valuation techniques used to determine fair value. These assumptions are required to be consistent with market participant assumptions that are reasonably available.

(ah) Derivatives instruments and hedging activity

The Company's primary objective for holding derivative financial instruments is to manage risks. Depending on the terms of the specific derivative instruments and market conditions, some of the Company's derivative instruments may be assets and liabilities at any particular point in time. The recognition of gains or losses resulting from changes in fair value of these derivative instruments is based on the use of each derivative instrument and whether it qualifies for hedge accounting. ASC 815 provides for three different ways to account for derivative instruments: (i) as a cash flow or fair value hedge; (ii) as a mark-to-market agreement with changes in fair value recognized in current period earnings; or (iii) as an accrual agreement, if the criteria for the normal purchase normal sale exception are met and documented.

The Company enters into derivatives to hedge its foreign currency risk exposure to losses from non-functional currency-denominated monetary assets, liabilities and cash flows, and to hedge its commodity risk exposure to losses from raw material price fluctuations. When the Company determines to designate a derivative instrument as a cash flow hedge, the Company formally documents the hedging relationship and its risk management objective and strategy for undertaking the hedge, the hedging instrument, the hedged item, the nature of the risk being hedged, how the hedging instrument's effectiveness in offsetting the hedged risk will be assessed, and a description of the method of measuring ineffectiveness. The Company also formally assesses, both at the hedge's inception and on an ongoing basis, whether the derivative that is used in hedging transactions is highly effective in offsetting changes in cash flows of hedged items. The effective portion of gains and losses on derivatives designated as cash flow hedges are initially deferred in other comprehensive income before being recognized in the statements of operations in the same period as the hedged transactions are reflected in earnings. Gains and losses on derivatives that are not designated or fail to qualify as effective hedges are recognized in the statements of operations as incurred.

Fair value of the derivative instruments is determined using observable inputs obtained from active markets or pricing models developed based on the underlying price of the hedged items. The values are also adjusted to reflect nonperformance risk of the counterparty with the Company, as necessary.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(ai) Earnings per share

Basic earnings per common share is computed by dividing income attributable to holders of common shares by the weighted average number of common shares outstanding during the year. Diluted earnings per common share reflects the potential dilution that could occur if securities or other contracts to issue common shares were exercised or converted into common shares. Common share equivalents are not included in the calculation of dilutive earnings per share if their effects are anti-dilutive.

(aj) Share-based compensation

The Company's share-based compensation with employees, such as share options, restricted shares and restricted share units ("RSUs") with a time-based vesting condition, is measured at the grant date, based on the fair value of the award, and 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. The share-based compensation expense related to the award which contains both time-based and performance-based vesting condition will be recognized when it is probable that the performance-based condition will be met. The probability of the performance condition to be met is not reflected when determining the fair value of the award.

(ak) Risks and uncertainties related to the COVID-19 pandemic

The COVID-19 pandemic has continued to pose significant challenges to many aspects of the Company's business, including its operations, customers, suppliers and projects. The extent to which the COVID-19 has and may persist to impact the Company's ability to effectively operate continues to be highly uncertain. The outbreak continues to evolve, and the impact that COVID-19, or new variants of COVID-19, will ultimately have on the Company's result of operations, financial condition, liquidity and cash flows cannot be estimated and is impossible to predict. The Company will continue to monitor and adhere to the policies, lockdowns, restrictions, and preventive measures implemented by the various government authorities, as well as general movement restrictions, social distancing and other measures imposed that may continue to evolve.

As of the date of issuance of these consolidated financial statements, the Company is not aware of any specific event or circumstance that would require updates to its estimates and judgments or revisions due to COVID-19 to the carrying value of its assets or liabilities. These estimates may change, as new events occur and additional information is obtained, and are recognized in the consolidated financial statements as soon as they become known.

(al) Recently issued accounting pronouncements

In January 2020, the FASB issued ASU No. 2020-01, which clarifies that a company should consider observable transactions that require a company to either apply or discontinue the equity method of accounting under Topic 323, Investment – Equity Method and Joint Ventures, for the purposes of applying the measurement alternative in accordance with Topic 321, Investments – Equity Securities immediately before applying or upon discontinuing the equity method. The amendment was effective for fiscal years beginning after December 15, 2020. The adoption of this new standard did not have a material impact on the Company's consolidated financial statements.

In March 2020, the FASB issued ASU No. 2020-04, "Reference Rate Reform (Topic 848)", to provide optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The new guidance is effective, at the Company's election, beginning March 12, 2020 through December 31, 2022. In addition, in January 2021 the FASB issued ASU No. 2021-01, "Reference Rate Reform — Scope," which clarified the scope of ASC 848 relating to contract modifications. In addition, in December 2022, the FASB issued ASU No. 2022-06, "Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848," which deferred the sunset date in Topic 848 from December 31, 2022 to December 31, 2024. The ASU 2022-06 became effective upon issuance.

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2. SUMMARY OF PRINCIPAL ACCOUNTING POLICIES (Continued)

(a) Recently issued accounting pronouncements (Continued)

With the planned discontinuation of LIBOR as a benchmark in June 2023 the Company has evaluated alternatives for its debt that utilizes LIBOR as a reference rate. The Company has \$208,621 of LIBOR debt as of December 31, 2022 and projects the balance will be approximately \$185,326 by the June 2023 discontinuance date. All of the Company's LIBOR debt agreements contemplate a change to the Secured Overnight Financing Rate (SOFR) as the reference rate upon discontinuance of LIBOR, with no exposure to the Company.

In August, 2020, the FASB issued ASU No. 2020-06, Debt-Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging-Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity (ASU 2020-06), which simplifies the accounting for convertible instruments by reducing the number of accounting models available for convertible debt instruments. This guidance also eliminates the treasury stock method to calculate diluted earnings per share for convertible instruments and requires the use of the if-converted method. The new standard was effective for the Company beginning January 1, 2022. The adoption of this new standard did not have a material impact on the Company's consolidated financial statements.

In October 2021, the FASB issued ASU No. 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, which require that an entity (acquirer) recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Revenue from Contracts with Customers (Topic 606). At the acquisition date, an acquirer should account for the related revenue contracts in accordance with Topic 606 as if it had originated the contracts. The amendments in this update also provide certain practical expedients for acquirers when recognizing and measuring acquired contract assets and contract liabilities from revenue contracts in a business combination. The standard is effective for interim and annual periods beginning after December 15, 2022, with early adoption permitted. The Company is currently evaluating the impact of adopting this new guidance and the potential effects it could have on the Company's consolidated financial statements.

In November 2021, the FASB issued ASU No. 2021-10, "Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance", to increase the transparency of government assistance received by most business entities by requiring the disclosure of: (1) the types of government assistance received; (2) the accounting for such assistance; and (3) the effect of the assistance on a business entity's financial statements. The Company adopted this new standard on January 1, 2022 and the adoption did not have a material impact on the Company's consolidated financial statements. See note 2(aa) for discussion regarding such amounts recorded in 2022.

In September 2022, the FASB issued ASU No. 2022-04, Liabilities-Supplier Finance Programs (Subtopic 405-50) - Disclosure of Supplier Finance Program Obligations, which requires that a buyer in a supplier finance program disclose sufficient information about the program to allow a user of financial statements to understand the program's nature, activity during the period, changes from period to period, and potential magnitude. The amendment in this update is expected to improve financial reporting by requiring new disclosures about the programs, thereby allowing financial statement users to better consider the effect of the programs on an entity's working capital, liquidity, and cash flows. The new standard is effective for fiscal years beginning after December 15, 2022, except for the amendment on roll forward information which is effective for fiscal years beginning after December 15, 2023. The Company is currently evaluating the impact of adopting this new guidance and the potential effects it could have on the Company's consolidated financial statements.

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3. ALLOWANCE FOR CREDIT LOSSES

Allowance for credit losses is comprised of allowances for accounts receivable trade, advances to suppliers and other receivables. Other receivables were included as a component of prepaid expenses and other current assets.

Accounts receivable trade, net consisted of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Accounts receivable trade, gross	698,498	1,020,880
Allowance for credit losses	(47,126)	(49,930)
Accounts receivable trade, net	<u>651,372</u>	<u>970,950</u>

Advances to suppliers, net consisted of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Advances to suppliers, gross	279,800	320,211
Allowance for credit losses	(19,682)	(1,375)
Advances to suppliers, net	<u>260,118</u>	<u>318,836</u>

Other receivable, net consisted of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Other receivable, gross	280,350	129,195
Allowance for credit losses	(9,397)	(9,999)
Other receivable, net	<u>270,953</u>	<u>119,196</u>

The following table presents the change in the allowances for credit losses related to the Company's accounts receivable trade and advances to suppliers:

	Accounts Receivable Trade	Advances to Suppliers and Other Receivable
	\$	\$
Balance as of December 31, 2019	29,545	31,712
Cumulative-effect adjustment for the adoption of ASU 2016-13	—	—
Provision for credit losses, net	9,785	1,647
Write-offs	(639)	(5,490)
Foreign exchange effect	1,602	633
Balance as of December 31, 2020	<u>40,293</u>	<u>28,502</u>
Provision for credit losses, net	7,171	444
Write-offs	(197)	(53)
Foreign exchange effect	(141)	186
Balance as of December 31, 2021	<u>47,126</u>	<u>29,079</u>
Provision for credit losses, net	4,349	1,424
Write-offs	(109)	(18,295)
Foreign exchange effect	(1,436)	(834)
Balance as of December 31, 2022	<u>49,930</u>	<u>11,374</u>

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4. INVENTORIES

Inventories consist of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Raw materials	155,433	310,394
Work-in-process	117,509	265,109
Finished goods	919,432	948,592
	<u>1,192,374</u>	<u>1,524,095</u>

Finished goods include modules of \$163,078 and \$161,138 as of December 31, 2021 and 2022, respectively, that allow solar energy systems to qualify for the U.S. Federal Investment Tax Credit by satisfying the 5% safe harbor method outlined in the U.S. Internal Revenue Service (IRS) guidance notice.

In 2020, 2021 and 2022, inventory was written down by \$42,907, \$14,070 and \$7,475, respectively, to reflect the lower of cost and net realizable value.

5. PROJECT ASSETS

Project assets consist of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Project assets — Development cost, including project acquisition and land cost	558,244	444,858
Project assets — EPC and other construction cost	469,117	379,635
	<u>1,027,361</u>	<u>824,493</u>
Current portion	594,107	385,964
Non-current portion	433,254	438,529

The Company recorded impairment loss on project assets of \$369, \$17,152 and \$1,674 for the years ended December 31, 2020, 2021 and 2022, respectively. Interest capitalized during development and construction of project assets was \$10,197, \$17,316 and \$26,439 for the years ended December 31, 2020, 2021 and 2022, respectively.

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6. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment, net consist of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Buildings	720,367	764,577
Leasehold improvements	32,812	30,896
Machinery	1,441,546	1,470,957
Furniture, fixtures and equipment	84,694	58,928
Motor vehicles	9,775	11,527
Freehold land	31,691	39,285
	<u>2,320,885</u>	<u>2,376,170</u>
Accumulated depreciation	(1,019,988)	(908,888)
Subtotal	<u>1,300,897</u>	<u>1,467,282</u>
Construction in process	100,980	359,361
Property, plant and equipment, net	<u>1,401,877</u>	<u>1,826,643</u>

Depreciation expense of property, plant and equipment was \$197,600, \$266,956 and \$225,351 for the years ended December 31, 2020, 2021 and 2022, respectively. Construction in process primarily represents production facilities under construction and the machinery under installation.

7. SOLAR POWER SYSTEMS, NET

Solar power systems, net consist of the following:

	At December 31, 2021	At December 31, 2022
	\$	\$
Solar power systems in operation	117,339	172,707
Solar power systems under construction	4,684	209,200
	<u>122,023</u>	<u>381,907</u>
Accumulated depreciation	(13,760)	(17,091)
Solar power systems, net	<u>108,263</u>	<u>364,816</u>

The Company reclassified certain project assets of \$117,560, nil and \$263,710 to solar power systems during the years ended December 31, 2020, 2021 and 2022, respectively. The Company intends to operate the project assets for the purpose of generating income from the sale or storage of electricity.

Depreciation expense of solar power systems was \$6,396, \$11,212 and \$4,074 for the years ended December 31, 2020, 2021 and 2022, respectively. Interest capitalized during development and construction of solar power systems, net was nil, nil and \$18,666 for the years ended December 31, 2020, 2021 and 2022, respectively.

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8. INTANGIBLE ASSETS, NET

The following table summarizes the Company's intangible assets, net:

<u>At December 31, 2022</u>	<u>Gross Carrying Amount \$</u>	<u>Accumulated Amortization \$</u>	<u>Net \$</u>
Technical know-how	1,443	(1,430)	13
Computer software	37,648	(20,131)	17,517
Total intangible assets, net	<u>39,091</u>	<u>(21,561)</u>	<u>17,530</u>

<u>At December 31, 2021</u>	<u>Gross Carrying Amount \$</u>	<u>Accumulated Amortization \$</u>	<u>Net \$</u>
Technical know-how	1,577	(1,562)	15
Computer software	39,059	(20,082)	18,977
Total intangible assets, net	<u>40,636</u>	<u>(21,644)</u>	<u>18,992</u>

Amortization expense for the years ended December 31, 2020, 2021 and 2022 were \$5,122, \$4,601 and \$3,586, respectively.

Amortization expenses of the above intangible assets are expected to be approximately \$3,102, \$2,627, \$2,186, \$2,031, \$1,977 and \$5,607 for the years ending December 31, 2023, 2024, 2025, 2026, 2027 and thereafter, respectively.

9. FAIR VALUE MEASUREMENT

The Company measures at fair value its financial assets and liabilities by using a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. Fair value is the price that would be received from the sale of an asset or paid to transfer a liability (i.e., an exit price) on the measurement date in an orderly transaction between market participants.

As of December 31, 2021 and 2022, with the exception of its listed equity securities, mutual funds to satisfy its obligations under its employee deferred compensation plan and money market funds which were measured based on unadjusted quoted prices for identical assets in active market (Level 1 inputs), the Company's financial assets and liabilities were measured at fair value on a recurring basis in periods subsequent to their initial recognition all using the significant other observable inputs (Level 2 inputs).

Foreign exchange option and forward contracts

The Company entered into certain foreign currency derivative contracts to protect against volatility of future cash flows caused by the changes in foreign exchange rates. The foreign currency derivative contracts do not qualify for hedge accounting and, as a result, the changes in fair value of the foreign currency derivative contracts are recognized in the consolidated statements of operations.

The Company's foreign currency derivative instruments relate to foreign exchange options or forward contracts involving major currencies such as Renminbi, Brazilian reals, Euros, Canadian dollars and South African rand. Since its derivative instruments are not traded on an exchange, the Company values them using standard industry valuation models. As applicable, these models use market-based observable inputs, including credit risk, foreign exchange rates, forward and spot rates for currencies. These inputs are observable in active markets over the terms of the instruments the Company holds, and accordingly, the fair value measurements are considered as Level 2 inputs.

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9. FAIR VALUE MEASUREMENT (Continued)

Interest rate swap and commodity hedge

In July 2020, the Company completed the sale of its class B membership interests in the Roserock project to an unrelated third party, and consequently the Company's interest rate swap contracts with total notional amounts of approximately \$399,000 were paid off following the loan repayment.

In 2021 and 2022, the Company entered into interest rate swaps to manage part of its interest rate risks, and entered into commodity hedge to manage part of its risks of rising raw material costs.

The estimated fair value of interest rate swaps and commodity hedge was measured based on observable market data, which were considered Level 2 inputs. The unrealized gains or losses on interest rate swaps that qualified as cash flow hedges were recognized in other comprehensive income.

The fair value of derivative instruments on the consolidated balance sheets as of December 31, 2021 and 2022 and the effect of derivative instruments on the consolidated statements of operations for the years ended December 31, 2020, 2021 and 2022 are as follows:

		Fair Value of Derivative Assets			
		At December 31, 2021		At December 31, 2022	
	Balance Sheet Location	Fair Value	Fair Value	Balance Sheet Location	Fair Value
		\$			\$
Foreign exchange forward contracts	Derivative assets — current	7,124		Derivative assets — current	7,730
Foreign exchange option contracts	Derivative assets — current	162		Derivative assets — current	9,576
Commodity hedge	Derivative assets — current	—		Derivative assets — current	210
Interest rate swap	Other non-current assets	76		Other non-current assets	1,064
	Total	7,362		Total	18,580

		Fair Value of Derivative Liabilities			
		At December 31, 2021		At December 31, 2022	
	Balance Sheet Location	Fair Value	Fair Value	Balance Sheet Location	Fair Value
		\$			\$
Foreign exchange forward contracts	Derivative liabilities — current	2,622		Derivative liabilities — current	24,104
Foreign exchange option contracts	Derivative liabilities — current	—		Derivative liabilities — current	1,255
	Total	2,622		Total	25,359

		Amount of Gain (Loss) Recognized in Statements of Operations		
		Years Ended December 31		
	Location of Gain (Loss) Recognized in Statements of Operations	2020	2021	2022
		\$	\$	\$
Foreign exchange forward contracts	Gain (loss) on change in fair value of derivatives, net	49,807	22,582	(49,388)
Foreign exchange option contracts	Gain (loss) on change in fair value of derivatives, net	1,376	220	8,918
Commodity hedge	Gain (loss) on change in fair value of derivatives, net	—	983	(4,019)
Interest rate swap	Gain (loss) on change in fair value of derivatives, net	(1,182)	—	—
	Total	50,001	23,785	(44,489)

Marketable securities

In December 2020, the Company received shares of Suzhou Good-Ark Electronics Co., Ltd, listed on Shenzhen stock exchange, for the disposal of its ownership of Suzhou iSilver Materials Co., Ltd, valued at RMB 91,370 (approximately \$14,003) on the transaction date as part of the consideration. These shares were classified and accounted for as available-for-sale, and were carried at fair value of \$20,195 and \$18,337 as of December 31, 2021 and 2022, respectively, included as a component of Prepaid expenses and other current assets. Unrealized gains on these shares of \$1,048 and \$4,744 were recorded under investment income in the consolidated statements of operations for the years ended December 31, 2020 and 2021, respectively, and unrealized losses of \$418 were recorded for the year ended December 31, 2022 under investment income (loss), net, in the consolidated statements of operations.

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9. FAIR VALUE MEASUREMENT (Continued)

Other fair value measurements

The Company measures certain long-lived assets or long-term investments at fair value on a non-recurring basis in periods after initial measurement in circumstances when the fair value of such assets is below its recorded cost and impairment is required. The Company assesses ROU assets for impairment quarterly. If the carrying value of ROU asset is determined to not be recoverable and is in excess of the estimated fair value, the Company recognizes an impairment charge in asset impairments on its consolidated statements of operations.

The Company recorded impairment charges for certain solar product manufacturing asset group of \$11,854, \$6,084 and \$60,330 for the years ended December 31, 2020, 2021 and 2022, respectively. The fair value of these assets was measured based on prices offered by unrelated third-party willing buyers and classified as Level 3 fair value measurements as the offering prices are not observable. The impairment was recorded in general and administrative expenses of CSI Solar segment on its consolidated statements of operations.

The Company recorded impairment loss on project assets of \$369, \$17,152 and \$1,674 for the years ended December 31, 2020, 2021 and 2022, respectively. The fair value of project assets was measured based on prices offered by unrelated third-party willing buyers and classified as Level 3 fair value measurements as the offering prices are not observable. The impairment was recorded as cost of revenues on its consolidated statements of operations.

The Company also holds financial instruments that are not recorded at fair value in the consolidated balance sheets, but whose fair value is required to be disclosed under the U.S. GAAP.

The carrying values of cash and cash equivalents, restricted cash, trade receivables, billed and unbilled, amounts due from related parties, other receivables, accounts payables, short-term notes payable, amounts due to related parties, other payables and short-term borrowings approximate their fair values due to the shorter-term maturity of these instruments. Long-term borrowings were \$523,634 and \$813,406 as of December 31, 2021 and 2022, respectively, which approximate their fair values since most of the borrowings contain variable interest rates. The fair value of long-term borrowings was measured based on discounted cash flow approach, which is classified as Level 2 as the key inputs can be corroborated with market data.

The carrying value of the Company's outstanding convertible notes was \$224,675 and \$225,977 as of December 31, 2021 and 2022, respectively, which approximates the fair value.

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10. VARIABLE INTEREST ENTITIES

The Company, through its subsidiaries, may enter into silent partnership agreements and/or various types of bankruptcy remote arrangements for the sole purpose of holding Japan project companies. Under the silent partnership agreements and/or the bankruptcy remote arrangements, the project companies are considered VIEs in which the Company has no majority equity interests, but is entitled to substantially all of the economic interests of the projects. In addition, the Company has the power to make decisions over the activities that most significantly impact the economic performance of the projects under the asset management agreement signed simultaneously between the project companies and a wholly-owned subsidiary, Canadian Solar Projects K.K. As such, the Company concluded it was the primary beneficiary of the project companies and thus these project companies were accounted for as consolidated VIEs since their establishment. The Company does not retain any ownership interest nor control of the bankruptcy remote entities, which individually and, in the aggregate, are insignificant.

As of December 31, 2021 and 2022, the carrying amounts and classifications of the consolidated VIEs' major assets and liabilities with immaterial items combined, excluding intercompany balances which are eliminated upon consolidation, included in the Company's consolidated balance sheets are as follows:

	At December 31, 2021	At December 31, 2022
	\$	\$
Cash	48,200	15,903
Project assets	289,315	320,460
Other assets	53,091	30,163
Total assets	390,606	366,526
Short-term borrowings	113,857	191,792
Long-term borrowings	106,880	49,675
Other liabilities	36,872	26,366
Total liabilities	257,609	267,833

Net income and overall cash flow activities during the years ended December 31, 2020, 2021 and 2022 were insignificant to the Company's consolidated financial statements.

11. INVESTMENTS IN AFFILIATES

Investments in affiliates consist of the following:

	At December 31,			
	2021		2022	
	Carrying Value	Ownership Percentage	Carrying Value	Ownership Percentage
	\$	(%)	\$	(%)
Suzhou Financial Leasing Co., Ltd.	27,026	4.78	27,328	4.17
RE Crimson Holdings LLC	18,854	20	22,272	20
Lavras Solar Holding S.A.	12,264	20	14,318	20
Canadian Solar Infrastructure Fund, Inc.	12,889	14.64	8,961	14.64
Francisco Sa Solar Holding S.A.	6,492	20	7,683	20
Suzhou Zhuosheng Venture Investment Fund, LLP	4,715	17.85	6,868	17.85
Salgueiro Solar Holding S.A	2,989	20	6,595	20
JuSheng (Suzhou) Solar Tech Co., Ltd.	6,274	4.55	5,922	4.38
Jaiba Solar Holding S.A.	4,903	20	5,077	20
Others	2,413	15.92-49	10,760	10.86-49
Total	98,819		115,784	

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11. INVESTMENTS IN AFFILIATES (Continued)

In 2015, the Company co-established an entity, Suzhou Financial Leasing Co., Ltd. and owned an effective interest of 4.78% and 4.17% as of December 31, 2021 and 2022, respectively. One of five board members is designated by CSI Solar. This investment is held through CSI Solar Co., Ltd. and is accounted for under the equity method, as CSI Solar Co., Ltd. has significant influence over the investee.

In 2017, Canadian Solar Infrastructure Fund, Inc. ("CSIF") completed its initial public offering. On March 5, 2021, CSIF issued 151,500 investment units at 125,115 Japanese yen per unit through public offering, the Company purchased 22,725 units in the amount of JPY2,843,238 (\$25,683). Through its initial private placement of 1,500 units, the purchase of 25,395 units in the initial public offering on October 26, 2017 and allotment of 7,000 units on September 5, 2018, the Company held a total of 56,620 units as of December 31, 2021 and 2022 at a total subscription amount of JPY6,247,998 (\$55,697). As of December 31, 2021 and 2022, the Company owned 14.64% of total units of CSIF, respectively. One out of the three members of the board of directors of CSIF represents the Company. The quorum for a board resolution of CSIF is a majority of the members of the board of directors, and the adoption of a resolution requires a majority of the votes present. As such, the Company is considered to have significant influence over the investee and the equity method is used in this investment.

In 2019, the Company completed the sales of its majority interests in Lavras Solar Holding S.A. ("Lavras"), Francisco Sa Solar Holding S.A ("Francisco Sa"), Salgueiro Solar Holding S.A ("Salgueiro"), and Jaiba Solar Holding S.A ("Jaiba") to an unrelated third party. In connection with the project sales, the Company's equity interest in Lavras, Francisco Sa, Salgueiro, and Jaiba have each decreased to 20%.

In 2020, the Company acquired a minor interest in Suzhou Zhuosheng Venture Investment Fund, LLP and owned an effective interest of 17.85% as of December 31, 2021 and 2022. This investment is held through CSI Solar Co., Ltd., and is accounted for under the equity method as it designated a representative to participate in the investee's investment decision-making processes and exercised significant influence over the investee.

In September 2021, the Company, through its wholly owned subsidiary, Recurrent Energy, LLC, completed the sale of its 80% stake in RE Crimson Holdings LLC ("Crimson") to an unrelated third party. Effective with the sale of the equity interests, the Company ceased having controlling financial interests in Crimson, and accounted for the transaction as partial sales of real estates under ASC 360-20. The Company considered that it would continue to exercise significant influences over its retained 20% equity interests in Crimson, and has accounted for these interests pursuant to the equity method of accounting. In connection with the sale, \$123,135 was recognized as revenue, and with the loss of controlling financial interests in Crimson, the Company derecognized net assets of \$42,333 and recognized the retained equity interests as investments in affiliates on its consolidated balance sheets.

In October 2021, the Company acquired a minor interest in JuSheng (Suzhou) Solar Tech Co., Ltd. and owned an effective interest of 4.55% and 4.38% as of December 31, 2021 and 2022, respectively. This investment is held through CSI Solar Co., Ltd., and is accounted for under the equity method as CSI Solar Co., Ltd. designated a representative director to participate in the investee's policy-making processes and exercised significant influence over the investee.

In December 2020 and December 2021, the Company completed the sales of its majority interests in Horus Solar S.A. De Capital Variable ("Horus") which holds its Horus project, and Recursos Solares PV De México II S.A. De Capital Variable ("Recursos") which holds its Tastiota project, respectively, to unrelated third parties. In connection with these sales, \$100,896 and \$113,843 were recognized as revenue in 2020 and 2021, respectively and the Company's interest in Horus and Recursos have each decreased to 49%. With the loss of controlling financial interests in Horus and Recursos, the Company derecognized net assets of \$10,363 and \$7,527 in 2020 and 2021, respectively, and recognized the retained equity interests as investments in affiliates on its consolidated balance sheets. As of December 31, 2021 and 2022, we owned 49% of each of Horus and Recursos, respectively.

Equity in earnings of affiliates were \$10,779, \$7,256 and \$15,440 for the years ended December 31, 2020, 2021 and 2022, respectively. Refer to Note 20 for the Company's related party balances and transactions in 2020, 2021 and 2022.

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12. LEASE

The Company leases manufacturing facilities in various regions where the Company operates. The Company also leases land for construction and operations of solar power systems, and leases office space, office equipment and motor vehicles for its sales and administrative functions. Leased assets are mainly located in the PRC, Brazil and United States. The land use rights represent lease prepayments and are expensed over the remaining term of the rights, which is generally 50 years.

The Company capitalizes lease costs to its project assets and solar power systems, when such costs qualify for capitalization as during periods in which activities necessary to get the property ready for its intended use are in progress.

The leases considered as ROU assets have various terms of up to twenty years. The Company also has certain leases with terms of 12 months or less, which are not recorded on the consolidated balance sheet.

The components of lease expenses were as follows:

	Year ended December 31, 2021	Year ended December 31, 2022
	\$	\$
Finance lease cost:		
Amortization of ROU assets	14,920	11,406
Interest on lease liabilities	1,349	1,994
Operating fixed lease cost	18,443	14,936
Short-term lease cost	1,884	1,028
Total lease cost	<u>36,596</u>	<u>29,364</u>

Supplemental balance sheet information related to leases was as follows:

	At December 31, 2021	At December 31, 2022
	\$	\$
Operating lease ROU assets	35,286	35,506
Land use rights, net	71,011	68,094
Total operating lease ROU assets	<u>106,297</u>	<u>103,600</u>
Operating lease liabilities - current	12,185	9,810
Operating lease liabilities - non-current	23,215	25,714
Total operating lease liabilities	<u>35,400</u>	<u>35,524</u>

Other supplemental information related to leases was as follows:

	Year ended December 31, 2021	Year ended December 31, 2022
	\$	\$
Cash paid for amounts included in the measurement of lease liabilities		
Operating cash outflows from finance lease	(1,349)	(1,994)
Operating cash outflows from operating lease	(19,972)	(15,032)
Financing cash outflows from finance lease	(35,554)	(20,194)
ROU assets obtained in exchange of new finance lease liabilities in non-cash transaction	60,102	—
ROU assets obtained in exchange of new operating lease liabilities in non-cash transaction	24,694	14,393
ROU assets disposed through early termination of operating leases in non-cash transaction	(1,880)	(965)

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12. LEASE (Continued)

	At December 31, 2021	At December 31, 2022
Weighted average of remaining lease term - finance leases (in years)	2.7	1.8
Weighted average of remaining lease term - operating leases (in years)	4.4	6.6
Weighted average of lease discount rate - finance lease	5.0 %	4.9 %
Weighted average of lease discount rate - operating lease	4.3 %	10.4 %

As of December 31, 2022, maturities of operating and finance lease liabilities were as follows:

	Operating Lease Payment \$	Finance Lease Payment \$	Total Lease Payment \$
Year Ending December 31:			
2023	10,798	15,517	26,315
2024	7,216	14,846	22,062
2025	5,580	6	5,586
2026	5,155	1	5,156
2027	3,666	—	3,666
Thereafter	33,133	—	33,133
Total future minimum lease payments	65,548	30,370	95,918
Less: imputed interest	30,024	1,301	31,325
NPV for future minimum lease payments	35,524	29,069	64,593
Analysis as:			
Short-term	9,810	14,697	24,507
Long-term	25,714	14,372	40,086
Total lease liabilities	35,524	29,069	64,593

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13. BORROWINGS

Borrowings consist of the following:

	At December 31, 2021	At December 31, 2022
Short-term borrowings related to project assets ⁽¹⁾	474,555	333,521
Other short-term borrowings	1,118,315	1,110,295
Subtotal for short-term borrowings	1,592,870	1,443,816
Long-term borrowings related to project assets	327,216	318,987
Other long-term borrowings	196,418	494,419
Subtotal for long-term borrowings	523,634	813,406
Total	2,116,504	2,257,222

(1) Includes long-term borrowings that were classified as current liabilities because these borrowings are associated with certain solar and battery storage projects that are expected to be sold within one year.

As of December 31, 2022, the Company had contractual credit facilities of \$3,412,104, of which \$1,694,732 has been drawn under borrowings and \$623,377 has been drawn under arrangements with banks including bank guarantees, letters of credit and short-term notes payable, and \$1,093,995 was available for draw down upon demand. In addition, as of December 31, 2022, the Company also had uncommitted credit facilities of \$1,464,055, of which \$562,490 has been drawn under borrowings and \$426,734 under arrangements with banks including bank guarantees, letters of credit and short-term notes payable. As of December 31, 2022, \$365,065 of the Company's borrowings under its energy business were non-recourse in nature.

The lenders under the Company's non-recourse facilities generally require the pledge of underlying solar projects and do not have direct recourse to Canadian Solar Inc.

As of December 31, 2022, borrowings of \$1,042,407 were secured by property, plant and equipment with carrying amounts of \$414,244, inventories of \$161,673, land use rights of \$46,607, restricted cash of \$6,715, accounts receivable of \$33,690, equity interest of \$34,859, project assets of \$353,503 and solar power systems of \$295,145. These borrowings were recorded as short-term borrowings of \$207,134, non-recourse borrowings - current of \$335,893, long-term borrowings of \$470,208, and non-recourse borrowings of \$29,172.

The Company's significant borrowings during the years ended December 31, 2021 and 2022 were as follows:

In 2016, Canadian Solar Projects K.K. obtained a syndicated three-year loan facility of JPY9,600,000 (\$85,200) with Sumitomo Mitsui Banking Corporation ("SMBC"), acting as the lead arranger and 13 other participating financial institutions. The facility is unsecured. The loan proceeds may be used to develop its solar project development pipeline in Japan and for general corporate working capital purposes. In 2020, the facility agreement was renewed with 11 participating financial institutions led by SMBC at a term of two years and a facility amount of JPY9,100,000 (\$88,200). In 2021, the subsidiary further expanded the facility to JPY10,000,000 (\$89,859) for a term of three years, with a September 2024 maturity. In 2022, the subsidiary amended the facility agreement to tranche 1 loan facility of JPY7,500,000 (\$57,198) guaranteed by the Company and tranche 2 loan facility of JPY2,500,000 (\$19,066) secured by a pledge of equity interest in CSIF. As of December 31, 2022, the loan was fully drawn.

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13. BORROWINGS (Continued)

In 2019, Canadian Solar Manufacturing (Thailand) Co., Ltd. obtained a five-year syndicated credit facility of \$188,000 with the Siam Commercial Bank Public Company Limited (“SCB”), acting as the lead arranger and China Minsheng Banking Corporation Ltd as one of the lenders. The facility is guaranteed by the Company. Under the same facility agreement, the subsidiary obtained a working capital facility of THB3,540,000 (\$106,729) from SCB to support the operations of its manufacturing Company in Thailand. As of December 31, 2022, the outstanding balance of the long-term loan was \$34,606 and the outstanding balance of working capital facility was \$11,777.

In 2020, Recurrent Energy, LLC (“Recurrent”) executed a \$75,000 development loan with Nomura Securities International, Inc. In 2021, the syndicated facility was renewed with Nomura at an expanded amount of \$125,000 that matures in November 2023. The outstanding credit facility is secured by certain project assets in the U.S. and Canada, and is guaranteed by the Company. As of December 31, 2022, the loan was fully drawn.

In 2020, Suntop Finco Pty Ltd. and Gunnedah Finco Pty Ltd. obtained a syndicated five-year non-recourse facility of AUD289,419 (\$206,022) with Australia and New Zealand Banking Group Limited acting as the facility agent and 3 other financial institutions, to finance the construction of a portfolio of solar projects in Australia. The facility was secured by the project assets and was set to mature in 2025. The loan was assumed by a buyer in connection with the sale of the portfolio in 2022.

In 2020, Japan Green Infrastructure Fund LP obtained a six-year mezzanine loan facility of JPY18,000,000 (\$174,241) with Madison Pacific Trust Limited acting as the facility agent and other four financial institutions. The facility is for the development and construction of solar projects in Japan. As of December 31, 2022, the outstanding non-recourse balance was \$16,002. Subsequently in January 2023, the subsidiary cancelled the unused commitment of JPY15,901,795 (\$122,208) under the facility agreement.

In 2021, Azuma Kofuji Daiichi Hatsudensho G.K. obtained a JPY24,513,530 (\$230,759) project finance loan facility with Nomura Capital Investment Co., Ltd. acting as lead arranger and other participating financial institutions to construct the 100MWp Azuma Kofuji project in Japan. The project finance loan is secured by the Azuma Kofuji project and will mature in November 2023. As of December 31, 2022, the outstanding non-recourse balance was \$148,867.

In 2021, four Japanese subsidiaries issued JPY8,100,000 (\$73,167) of non-recourse green project bonds to construct a portfolio of projects in Japan. The project bonds are secured by certain project assets and will mature in 2039. As of December 31, 2022, the outstanding balance was \$32,515.

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13. BORROWINGS (Continued)

In 2021, Sunmex Renovables, S.A. De C.V., a 51% owned subsidiary, obtained \$60,000 project finance loan facility with Sumitomo Mitsui Banking Corporation (“SMBC”). The facility has been partially drawn for the construction of the El Mayo project in Mexico. As of December 31, 2022, the outstanding balance was \$28,000. The Company has provided a guarantee on the outstanding balance through a letter of credit.

In 2021, Canadian Solar Spain S.L.U obtained a €50,000 (\$61,132) credit facility with Banco Santander, S.A. (“Santander”). The facility comprises a term loan of €25,000 and a revolving credit facility of €25,000, and is guaranteed by the Company. The facility will mature in May 2024. As of December 31, 2022, the loan was fully drawn and the revolving credit facility outstanding balance was \$26,755.

In 2021, eight Brazilian subsidiaries obtained a BRL500,000 (\$95,921) financing facility with BTG Pactual and Itaú BBA to support the equity contribution for the development and construction of solar power projects in Brazil. The facility is guaranteed by the Company and will mature in December 2023. As of December 31, 2022, the outstanding balance was \$87,873.

In 2021, Canadian Solar Sunenergy (Jiaxing) Co. Ltd. (formerly known as CSI Modules (Jiaxing) Co., Ltd.) entered into a RMB580,000 (\$90,918) long-term loan facility with Shanghai Pudong Development Bank. The loan facility is secured by certain property and plant, is guaranteed by CSI Solar, and matures in November 2028. As of December 31, 2022, \$55,510 was drawn.

In 2021, Canadian Solar EMEA Capital Markets, S.A.U. issued €30,000 (\$34,106) fixed rate notes on Spain’s alternative fixed-income market (the “MARF”). The notes are guaranteed by the Company and mature on December 2, 2026. As of December 2021 and 2022, the carrying value net of unamortized issuance costs of the fixed rate notes were \$33,676 and \$31,638, respectively, and were included as a component of other non-current liabilities.

Between 2021 and 2022, CSI Cells (Yancheng) Co., Ltd. entered into credit facilities in the aggregate of RMB710,000 (\$101,944) with various banks. The credit facilities of RMB 510,000 (\$73,227) are unsecured and are guaranteed by CSI Solar. The remaining RMB 200,000 (\$28,717) is secured by certain property, plant and equipment, and is guaranteed by CSI Solar. As of December 31, 2022, \$78,072 was drawn.

Between 2021 and 2022, Canadian Solar Sunenergy (Baotou) Co., Ltd. entered into credit facilities in the aggregate of RMB880,000 (\$126,353) with six banks. Credit facility of RMB580,000 (\$83,278) is guaranteed by CSI Solar, and the remaining RMB300,000 (\$43,075) is secured by certain property, plant and equipment, and is guaranteed by Canadian Solar Manufacturing (Luoyang) Inc and CSI Solar. As of December 31, 2022, \$101,407 was drawn.

As of December 31, 2022, the financial covenants related to these borrowings were met.

In connection with the sale of solar projects for the years ended December 31, 2020, 2021 and 2022, borrowings of \$316,496, \$118,406 and \$193,578, respectively, were assumed by the buyers.

These obtained long-term borrowings mentioned above bear effective floating interest rates from 1.2% to 8.3%.

Future principal repayments on the borrowings are as follows. Included in the future principal repayment of 2023 are \$333,521 of current portion of long-term borrowings, associated with certain solar and battery storage projects that are expected to be sold within one year:

2023	\$	1,443,816
2024		639,862
2025		83,615
2026		31,775
2027		22,475
Thereafter		35,679
Total	\$	<u>2,257,222</u>

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13. BORROWINGS (Continued)

Interest expenses

Weighted average effective interest rates on borrowings are as follows:

	At December 31, 2021	At December 31, 2022
Short-term borrowings	3.0 %	5.3 %
Long-term borrowings	3.5 %	4.1 %

The Company capitalized interest costs incurred on borrowings obtained to finance construction of solar and battery storage projects or property, plant and equipment until the asset is ready for its intended use. The interests incurred during the years ended December 31, 2020, 2021 and 2022 are as follows:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
Interest capitalized — project assets	10,197	17,316	26,439
Interest capitalized — solar power systems, net	—	—	18,666
Interest capitalized — property, plant and equipment	154	—	—
Interest expense	71,874	58,153	74,266
Total interest incurred	82,225	75,469	119,371

14. SHORT-TERM NOTES PAYABLE

The Company enters into arrangements with banks whereby the banks issue notes to the Company's materials and equipment vendors, which effectively serve to extend the payment date of the associated accounts payable. Vendors may present the notes for payment to a bank, including the bank issuing the note, prior to the stated maturity date, but generally at a discount from the face amount of the note. The Company is generally required to deposit restricted cash balances with the issuing bank, which are utilized to immediately repay the bank upon the bank's settlement of the notes. Given the purpose of these arrangements is to extend the payment dates of accounts payable due to suppliers, the Company has recorded such amounts as short-term notes payable. As payments by the bank are immediately repaid by the Company's restricted cash balances and other deposits with the same bank, the notes payable does not represent cash borrowings from the bank. As of December 31, 2021 and 2022, short-term notes payable was \$881,184 and \$1,493,399, respectively.

15. ACCRUED WARRANTY COSTS

The Company's warranty activity is summarized below:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
Beginning balance	55,878	37,732	45,146
Warranty provision	26,931	45,053	68,411
Warranty costs incurred	(46,067)	(35,432)	(31,943)
Foreign exchange effect	990	(2,207)	(4,937)
Ending balance	37,732	45,146	76,677

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16. RESTRICTED NET ASSETS

As stipulated by the relevant laws and regulations applicable to PRC's foreign investment enterprise, the Company's PRC subsidiaries are required to make appropriations from net income as determined under accounting principles generally accepted in the PRC ("PRC GAAP") to non-distributable reserves, which include general reserve, enterprise expansion reserve and staff welfare and bonus reserve. The wholly-owned PRC subsidiaries are not required to make appropriations to the enterprise expansion reserve but appropriations to the general reserve are required to be made at not less than 10% of the profit after tax as determined under PRC GAAP. The board of directors determines the staff welfare and bonus reserve.

The general reserve is used to offset future losses. The PRC subsidiaries may, upon a resolution passed by the stockholder, convert the general reserve into capital. The staff welfare and bonus reserve is used for the collective welfare of the employees of the subsidiaries. The enterprise expansion reserve is for the expansion of the PRC subsidiaries' operations and can be converted to capital subject to approval by the relevant authorities. These reserves represent appropriations of the retained earnings determined in accordance with Chinese law.

In addition to the general reserve, the Company's PRC subsidiaries are required to obtain approval from the local PRC government prior to distributing any registered share capital. Accordingly, both the appropriations to general reserve and the registered share capital of the Company's PRC subsidiaries are considered as restricted net assets amounting to \$658,166 as of December 31, 2022.

17. CONVERTIBLE NOTES

On September 16, 2020, the Company issued \$200,000 of convertible notes (the "2020 Notes"). The Company granted the initial purchasers a 30-day option to purchase up to an additional \$30,000 aggregate principal amount of the 2020 Notes. The option was fully exercised by initial purchasers on the same day. The key terms of the 2020 Notes are described as follows:

Maturity date. The 2020 Notes mature on October 1, 2025.

Interest. The 2020 Notes holders are entitled to receive interest at 2.50% per annum on the principal outstanding, in semi-annually installments, payable in arrears on April 1 and October 1 of each year, beginning April 1, 2021.

Conversion. The initial conversion rate is 27.2707 shares per \$1,000 initial principal amount, which represents an initial conversion price of approximately \$36.67 per share. The 2020 Notes are convertible at any time prior to maturity. The conversion rate is subject to change for certain anti-dilution events and upon a change in control. If the holders elect to convert the 2020 Notes upon a change of control, the conversion rate will increase by a number of additional shares as determined by reference to an adjustment schedule based on the date on which the change in control becomes effective and the price paid per common share in the transaction (referred to as the "Fundamental Change Make-Whole Premium"). The Fundamental Make-Whole Premium is intended to compensate holders for the loss of time value upon early exercise.

Redemption. The Company may redeem for cash all or any portion of the notes (i) at the Company's option, on or after October 6, 2023, if the last reported sale price of the Company's common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which the Company provides notice of redemption, or (ii) following the occurrence of certain tax related events, in each case, at a redemption price equals to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

As of December 31, 2021 and 2022, the carrying value of the convertible notes was \$224,675 and \$225,977, net of unamortized issuance costs of \$5,325 and \$4,023, respectively. The debt issuance costs are being amortized through interest expense over the period from September 16, 2020, the date of issuance, to October 1, 2025, the date of expiration, using the effective interest rate method at the rate of 3.18%. The amortization expense was \$1,461 and \$1,302 for the years ended December 31, 2021 and 2022, respectively. Coupon interest of \$5,750 was recorded for each of the years ended December 31, 2021 and 2022, of which \$1,438 was not paid and was recorded in other payables on the consolidated balance sheets as of December 31, 2021 and 2022.

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18. INCOME TAXES

Income tax expenses (benefits)

The provision for income taxes is comprised of the following:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
Income (loss) before income taxes and equity in earnings of affiliates			
Canada	(31,896)	6,237	(19,357)
United States	(117,145)	66,432	22,275
PRC including Hong Kong and Taiwan	184,113	(35,943)	193,705
Japan	48,665	51,910	1,179
Singapore	(2,956)	(7,728)	69,424
Brazil	(39,412)	14,448	32,052
Thailand	74,166	(15,562)	17,155
Other	18,949	58,670	40,035
	<u>134,484</u>	<u>138,464</u>	<u>356,468</u>
Current tax expense (benefit)			
Canada	36,226	(1,124)	(16,707)
United States	(71,421)	15,937	(1,684)
PRC including Hong Kong and Taiwan	30,276	47,356	47,528
Japan	18,941	24,047	3,054
Singapore	(489)	617	872
Brazil	—	6,151	5,023
Thailand	—	—	—
Other	8,722	10,097	19,183
	<u>22,255</u>	<u>103,081</u>	<u>57,269</u>
Deferred tax expense (benefit)			
Canada	(10,792)	685	10,629
United States	23,173	(1,604)	1,996
PRC including Hong Kong and Taiwan	(17,998)	(65,017)	500
Japan	(10,571)	(353)	(173)
Singapore	—	—	231
Brazil	(11,670)	1,244	5,546
Thailand	—	—	—
Other	3,620	(2,192)	(2,645)
	<u>(24,238)</u>	<u>(67,237)</u>	<u>16,084</u>
Total income tax expense (benefit)			
Canada	25,434	(439)	(6,078)
United States	(48,248)	14,333	312
PRC including Hong Kong and Taiwan	12,278	(17,661)	48,028
Japan	8,370	23,694	2,881
Singapore	(489)	617	1,103
Brazil	(11,670)	7,395	10,569
Thailand	—	—	—
Other	12,342	7,905	16,538
	<u>(1,983)</u>	<u>35,844</u>	<u>73,353</u>

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18. INCOME TAXES (Continued)

The Company's major operating subsidiaries and their respective income taxes are as follows:

Canada

CSI was incorporated in Ontario, Canada and was subject to both federal and Ontario provincial corporate income taxes at a rate of 26.5%. In July 2022, CSI filed articles of continuance to change its jurisdiction from the provincial jurisdiction of British Columbia to the provincial jurisdiction of Ontario. CSI is subject to federal and Ontario provincial corporate income taxes at a rate of 26.5% through December 31, 2022.

Canadian Solar Solutions Inc. was incorporated in Ontario, Canada and is subject to both federal and Ontario provincial corporate income taxes at a rate of 25% for all years ended December 31, 2020, 2021 and 2022.

United States

Canadian Solar (USA) Inc. was incorporated in Delaware, U.S. and is subject to federal and state corporate income taxes at a rate of 22.2%, 26.4% and 24.6% for the years ended December 31, 2020, 2021 and 2022, respectively.

Canadian Solar SSES (US) Inc. was incorporated in Delaware, U.S. and is subject to federal and state corporate income taxes at a rate of 21.9% for the year ended December 31, 2022.

Recurrent Energy Group Inc. was incorporated in Delaware, U.S. and is subject to federal and state corporate income taxes at a rate of 26.1%, 22.2% and 22.5% for the years ended December 31, 2020, 2021 and 2022, respectively.

Japan

Canadian Solar Japan K.K. was incorporated in Japan and is subject to Japanese corporate income taxes at a normal statutory rate of approximately 31.8% for the years ended December 31, 2020, 2021 and 2022, respectively.

Singapore

Canadian Solar Energy Holding Singapore Pte. Ltd. was incorporated in Singapore and is subject to Singapore corporate income tax at a rate of approximately 17% for the years ended December 31, 2020, 2021 and 2022, respectively.

Germany

Canadian Solar EMEA GmbH was incorporated in Munich, Germany and is subject to German corporate income tax at a rate of approximately 33% for the years ended December 31, 2020, 2021 and 2022, respectively.

Brazil

Canadian Solar Brazil Commerce, Import and Export of Solar Panels Ltd. was incorporated in Brazil and is subject to Brazil corporate income tax at a rate of 34% for the years ended December 31, 2020, 2021 and 2022, respectively.

Thailand

Canadian Solar Manufacturing (Thailand) Co., Ltd. was incorporated in Thailand and is subject to Thailand corporate income taxes at a normal statutory rate of 20%. The Company currently has three Board of Investment certificates for full tax exemption which have different effective years. The certificates started from year 2017, 2017 and 2020, respectively, one of which expired in 2022 and the other two will expire in 2025 and 2028, respectively.

PRC

The major operating subsidiaries, including CSI Solartronics (Suzhou) Co., Ltd., CSI Solar Technologies Inc., CSI Cells Co., Ltd., Canadian Solar Manufacturing (Luoyang) Inc., CSI Solar Co., Ltd. and Canadian Solar Manufacturing (Changshu) Inc., and Suzhou Sanysolar Materials Technology Co., Ltd. were governed by the PRC Enterprise Income Tax Law ("EIT Law").

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18. INCOME TAXES (Continued)**PRC (Continued)**

Certain of the Company's PRC subsidiaries, such as CSI New Energy Holding Co., Ltd. and Canadian Solar Manufacturing (Luoyang) Inc., were once HNTes and enjoyed preferential enterprise income tax rates. These benefits have, however, expired. In 2022, only Suzhou Sanysolar Materials Technology Co., Ltd, Changshu Tegu New Material Technology Co., Ltd, CSI New Energy Development (Suzhou) Co., Ltd (formerly known as Suzhou Gaochuangte New Energy Development Co., Ltd), Canadian Solar Photovoltaic Technology (Luoyang) Co., Ltd. and Changshu Tlian Co., Ltd are HNTes and enjoyed preferential enterprise income tax rates.

Hong Kong

Canadian Solar International Ltd. was incorporated in Hong Kong, China, and are subject to Hong Kong profits tax at a rate of 16.5% for the years ended December 31, 2020, 2021 and 2022, respectively.

Reconciliation between the provision for income tax computed by applying Canadian federal and provincial statutory tax rates to income before income taxes and equity in earnings of affiliates and the actual provision and benefit for income taxes is as follows:

	Years Ended December 31,		
	2020	2021	2022
Combined federal and provincial income tax rate	27 %	27 %	27 %
Effect of permanent difference	4 %	4 %	(3)%
Effect of different tax rate on earnings in other jurisdictions	(6)%	9 %	1 %
Effect of tax holiday	(1)%	(3)%	(1)%
Effect of true-up	(13)%	4 %	(2)%
Unrecognized tax provision	— %	(5)%	— %
Change in valuation allowance	(14)%	(3)%	(1)%
Effect of change in tax rate	2 %	(7)%	— %
	<u>(1)%</u>	<u>26 %</u>	<u>21 %</u>

The aggregate amount and per share effect of tax holiday are as follows:

	Years Ended December 31,		
	2020	2021	2022
	(In Thousands of U.S. Dollars, except per share data)		
The aggregate amount	1,287	4,466	2,520
Per share — basic	0.02	0.07	0.04
Per share — diluted	0.02	0.07	0.04

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18. INCOME TAXES (Continued)**Hong Kong (Continued)**

The components of the deferred tax assets and liabilities are presented as follows:

	At December 31, 2021	At December 31, 2022
	\$	\$
Deferred tax assets:		
Accrued warranty costs	14,942	17,318
Allowance for credit losses	12,175	11,772
Inventory write-down	1,404	1,235
Future deductible expenses	24,910	32,351
Depreciation and impairment difference of property, plant and equipment and solar power systems	24,561	36,332
Accrued liabilities related to antidumping and countervailing duty deposits	39	40
Government subsidies	39,470	28,723
Net operating losses carry-forward	110,012	79,474
Unrealized foreign exchange loss and capital loss	491	2,677
Interest limitation	10,800	14,031
Others	47,690	48,761
Total deferred tax assets, gross	286,494	272,714
Valuation allowance	(45,682)	(43,488)
Total deferred tax assets, net of valuation allowance	240,812	229,226
Deferred tax liabilities:		
Derivative assets	2,153	2,899
Depreciation difference of property, plant and equipment	27,776	34,914
Insurance recoverable	32	55
Unrealized foreign exchange gain	3,452	3,906
Others	19,046	24,856
Total deferred tax liabilities	52,459	66,630
Net deferred tax assets	188,353	162,596
Analysis as:		
Deferred tax assets	236,503	229,226
Deferred tax liabilities	(48,150)	(66,630)
Net deferred tax assets	188,353	162,596

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18. INCOME TAXES (Continued)**Hong Kong (Continued)**

In accordance with the EIT Law, dividends, which arise from profits of foreign invested enterprises in PRC earned after January 1, 2008, are subject to a 5% or 10% withholding income tax. Under applicable accounting principles, a deferred tax liability should be recorded for taxable temporary difference attributable to excess of financial reporting basis over tax basis in the investment in a foreign subsidiary. However, a deferred tax liability is not recognized if the basis difference is not expected to reverse in the foreseeable future and is expected to be permanent in duration. As of December 31, 2022, all of the undistributed earnings of approximately \$592,731 attributable to the Company's PRC subsidiaries and affiliates are considered to be permanently reinvested, and no provision for PRC withholding income tax on dividend has been made thereon accordingly. Upon distribution of those earnings generated after January 1, 2008, in the form of dividends or otherwise, the Company would be subject to the then applicable PRC tax laws and regulations. The amounts of unrecognized deferred tax liabilities for these earnings are in the range of \$29,637 to \$59,273, depending on whether the immediate offshore companies can enjoy the preferential withholding tax rate of 5%.

Valuation allowance

Movement of the valuation allowance is as follows:

	Years Ended December 31.		
	2020	2021	2022
	\$	\$	\$
Beginning balance	70,627	50,118	45,682
Reversals	(21,585)	(4,671)	(1,531)
Foreign exchange effect	1,076	235	(663)
Ending balance	<u>50,118</u>	<u>45,682</u>	<u>43,488</u>

As of December 31, 2022, the Company has accumulated net operating losses of \$579,862 of which \$338,692 will expire between 2023 and 2042, and the remaining can be carried forward and back.

The Company considers positive and negative evidences to determine whether some portion or all of the deferred tax assets will not be realized. This assessment considers, among other matters, the nature, frequency and severity of recent losses, forecasts of future profitability, the duration of statutory carry-forward periods, the Company's experience with tax attributes expiring unused and tax planning alternatives. The Company has considered the following possible sources of taxable income when assessing the realization of deferred tax assets:

- Tax planning strategies;
- Future reversals of existing taxable temporary differences;
- Further taxable income exclusive of reversing temporary differences and carry-forwards;

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18. INCOME TAXES (Continued)**Valuation allowance (Continued)**

The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible for tax purposes.

The Company has recognized a valuation allowance of \$45,682 and \$43,488 as at December 31, 2021 and 2022, respectively.

Uncertain tax positions

The Company makes an assessment of the level of authority for each of its uncertain tax positions (including the potential application of interest and penalties) based on their technical merits, and has measured the unrecognized benefits associated with such tax positions. This liability is recorded as liability for uncertain tax positions in the consolidated balance sheets. In accordance with its policies, the Company accrues and classifies interest and penalties associated with such unrecognized tax benefits as a component of its income tax provision. The amount of interest and penalties accrued as of December 31, 2021 and 2022 was \$1,585 and \$961, respectively. The Company does not anticipate any significant changes to its liability for unrecognized tax positions within the next 12 months.

The following table illustrates the movement and balance of the Company's liability for uncertain tax positions (excluding interest and penalties) for the years ended December 31, 2020, 2021 and 2022, respectively.

	Years Ended December 31,		
	2020	2021	2022
	\$	\$	\$
Beginning balance	10,557	9,628	5,863
Reductions for tax positions from prior years/Statute of limitations expirations	(1,011)	(3,763)	(678)
Foreign exchange effect	82	(2)	(415)
Ending balance	<u>9,628</u>	<u>5,863</u>	<u>4,770</u>

The Company is subject to taxation in various jurisdictions where it operates, mainly including Canada, China and the United States. Generally, the Company's taxation years from 2016 to 2022 are open for reassessment to the Canadian tax authorities. The Company is subject to taxation in the United States and various state jurisdictions. The Company is not currently under examination by the federal or state tax authorities. The Company's income tax returns for 2017 through 2022 remain open to examination by the U.S. tax authorities.

According to the PRC Tax Administration and Collection Law, the statute of limitations is three years if the underpayment of income taxes has resulted from the computational errors of the taxpayer. The statute of limitations could be extended to five years under special circumstances. For income tax adjustments relating to transfer pricing matters, the statute of limitations is ten years. Therefore, the Company's Chinese subsidiaries might be subject to reexamination by the Chinese tax authorities on non-transfer pricing matters for taxation years up to 2017 retrospectively, and on transfer pricing matters for taxation years up to 2012 retrospectively. There is no statute of limitations in case of tax evasion in PRC.

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19. EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per share for the years indicated:

	Years Ended December 31,		
	2020	2021	2022
	(In Thousands of U.S. Dollars, except share and per share data)		
Numerator:			
Net income attributable to Canadian Solar Inc. — basic	\$ 146,703	\$ 95,248	\$ 239,968
Dilutive effect of convertible notes	1,518	5,300	5,183
Net income attributable to Canadian Solar Inc. — diluted	<u>\$ 148,221</u>	<u>\$ 100,548</u>	<u>\$ 245,151</u>
Denominator:			
Denominator for basic calculation — weighted average number of common shares — basic	59,575,898	61,614,391	64,324,558
Diluted effects of share number from share options and RSUs	897,258	985,554	586,420
Dilutive effects of share number from convertible notes	1,833,663	6,272,157	6,272,157
Denominator for diluted calculation — weighted average number of common shares — diluted	<u>62,306,819</u>	<u>68,872,102</u>	<u>71,183,135</u>
Basic earnings per share	<u>\$ 2.46</u>	<u>\$ 1.55</u>	<u>\$ 3.73</u>
Diluted earnings per share	<u>\$ 2.38</u>	<u>\$ 1.46</u>	<u>\$ 3.44</u>

The following table sets forth anti-dilutive shares excluded from the computation of diluted earnings per share for the years indicated.

	Years Ended December 31,		
	2020	2021	2022
Share options and RSUs	<u>187,083</u>	<u>3,877</u>	<u>9,295</u>

20. RELATED PARTY BALANCES AND TRANSACTIONS

Related party balances

The amount due from related parties, current of \$48,614 and amount due from related parties, non-current of \$33,489 as of December 31, 2022 primarily consists of shareholder loans of \$52,424 and \$29,613, respectively, to Horus and Recursos, each the Company's 49% owned affiliates in Mexico with the remaining 51% ownership by a Korean investor. No amount was due as of December 31, 2022.

The amount due to related parties as of December 31, 2022 was not material.

Guarantees and loans

Dr. Shawn Qu fully guaranteed loan facilities from two Chinese banks of RMB135,000 (\$20,648) in 2020, and from a Chinese bank of RMB12,000 (\$1,882) in 2021, respectively. No amount was drawn down under the facilities as of December 31, 2020 and 2021. Dr. Shawn did not guarantee loan facilities of the Company in 2022.

The Company granted 26,073 restricted share units to Dr. Shawn Qu in 2020 on account of his having guaranteed these loan facilities. No grants were made in 2021 and 2022.

Sales and purchase contracts with affiliates

In 2020, 2021 and 2022, the Company provided asset management service to CSIF, the Company's 14.64% owned affiliate in Japan, in the amount JPY394,506 (\$3,723), JPY829,053 (\$7,541) and JPY545,131 (\$4,180), respectively, and provided O&M service to CSIF in the amount of JPY805,021 (\$7,564), JPY981,161 (\$9,195) and JPY914,933 (\$7,036), respectively.

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20. RELATED PARTY BALANCES AND TRANSACTIONS (Continued)

Sales and purchase contracts with affiliates (Continued)

In 2022, the Company sold modules to Salgueiro I Renewable Energy S.A., Salgueiro II Renewable Energy S.A. and Salgueiro III Renewable Energy S.A., each the Company's 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$119, \$119 and \$119, respectively. In 2021, the Company sold modules to these affiliates in the amounts of \$105, \$105 and \$114, respectively. In 2020, the Company sold modules to these affiliates in the amounts of \$11,636, \$9,996 and \$9,403, respectively.

In 2022, the Company sold modules to Francisco SA I Renewable Energy S.A., Francisco SA II Renewable Energy S.A. and Francisco SA III Renewable Energy S.A., each the Company's 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$220, \$211 and \$211, respectively. In 2021, the Company sold modules to these affiliates in the amounts of \$7,170, \$7,592 and \$8,121, respectively.

In 2022, the Company sold modules to Lavras I Solar Renewable Energy S.A., the Company's 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$202. In 2021, the Company sold modules to Lavras I Solar Renewable Energy S.A., Lavras II Solar Renewable Energy S.A., Lavras III Solar Renewable Energy S.A., Lavras IV Solar Renewable Energy S.A. and Lavras V Solar Renewable Energy S.A., each the Company's 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$5,707, \$5,842, \$6,049, \$6,233 and \$6,233, respectively.

In 2022, the Company provided battery storage solutions to Sonoran West Solar Holdings, LLC. and Sonoran West Solar Holdings 2, LLC, each the Company's 20% owned affiliate in the United States held through RE Crimson Holdings LLC with the remaining 80% ownership by a Canadian infrastructure fund, in the amounts of \$207,728 and \$159,655, respectively. In 2021, the Company provided battery storage solutions to these affiliates in the amounts of \$12,822 and \$6,955, respectively.

In 2021 and 2022, the Company purchased raw materials from Yancheng Jiwa New Material Technology Co., Ltd., the Company's 10.91% owned affiliate with the remaining 89.09% ownership by Chinese investors, in the amount of RMB10,831 (\$1,688) and RMB34,772 (\$5,192), respectively.

In 2021, the Company sold modules to Jaiba 3 Renewable Energy S.A., Jaiba 4 Renewable Energy S.A. and Jaiba 9 Renewable Energy S.A., each the Company's 20% owned affiliate in Brazil with the remaining 80% ownership by Chinese investors, in the amounts of \$834, \$3,210 and \$3,046, respectively. In 2020, the Company sold modules to these affiliates in the amounts of \$5,971, \$3,696 and \$1,372, respectively.

In 2020 and 2021, the Company sold two and two solar power projects to CSIF in the amount of JPY888,000 (\$8,392) and JPY30,601,181 (\$282,133), respectively.

In 2020 and 2021, the Company purchased raw materials from Luoyang Jiwa New Material Technology Co., Ltd., the Company's 10.91% owned affiliate with the remaining 89.09% ownership by Chinese investors, in the amount of RMB31,388 (\$4,545) and RMB19,378 (\$2,995), respectively.

In 2020, the Company provided EPC services to Lavras Solar Holding S.A., the Company's 20% owned affiliate in Brazil, in the amount of BRL5,061 (\$974).

In December 2020, the Company fully disposed of its ownership of Suzhou iSilver Materials Co., Ltd. for cash and exchange of shares with an unrelated third party. From January 1, 2020 through the date of disposal, the Company purchased raw materials in the amount of RMB168,032 (\$24,301) from this former affiliate.

In July 2020, the Company fully disposed of its ownership of Suzhou Kzone Equipment Technology Co., Ltd. for cash to an unrelated third party. From January 1, 2020 through the date of disposal, the Company purchased raw materials in the amount of RMB7,381 (\$1,048) from this former affiliate.

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21. COMMITMENTS AND CONTINGENCIES**a) Capital commitments**

As of December 31, 2022, the commitments for the purchase of property, plant and equipment were approximately \$300,294, and the payment schedule for the commitments is as follow:

Year Ending December 31:	\$
2023	267,766
2024	32,475
2025	53
Total	<u>300,294</u>

b) Solar power system commitments

As of December 31, 2022, the commitments related to construction EPC and other services of the Company's solar power systems were approximately \$56,124, and the payment schedule for the commitments is as follow:

Year Ending December 31:	\$
2023	50,617
2024	5,245
2025	262
Total	<u>56,124</u>

c) Contingencies**Class Action Lawsuits**

In January 2015, the plaintiff in a class action lawsuit filed against the Company and certain of its executive officers in the Ontario Superior Court of Justice obtained an order for class certification in respect of certain claims for which he had obtained leave in September 2014 to assert the statutory cause of action for misrepresentation under the Ontario Securities Act, for certain negligent misrepresentation claims and for oppression remedy claims advanced under the CBCA. The Court approved a settlement of the action on October 30, 2020. The settlement is no admission of liability or wrongdoing by the Company or any of the other defendants.

Solar 1

On October 17, 2012, the United States Department of Commerce, or USDOC, issued final affirmative determinations with respect to its antidumping and countervailing duty investigations on crystalline silicon photovoltaic, or CSPV, cells, whether or not incorporated into modules, from China. On November 30, 2012, the U.S. International Trade Commission, or USITC, determined that imports of CSPV cells had caused material injury to the U.S. CSPV industry. The USITC's determination was subsequently affirmed by the U.S. Court of International Trade, or CIT, and the U.S. Court of Appeals for the Federal Circuit, or Federal Circuit.

As a result of these determinations, the Company was required to pay cash deposits on Chinese-origin CSPV cells imported into the U.S., whether or not incorporated into modules. The rates applicable to the Company were 13.94% (antidumping duty) and 15.24% (countervailing duty). The Company paid all the cash deposits due under these determinations. Several parties challenged the determinations of the USITC in appeals to the CIT. On August 7, 2015, the CIT sustained the USITC's final determination and on January 22, 2018, the Federal Circuit upheld the CIT's decision. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The rates at which duties will be assessed and payable are subject to administrative reviews.

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21. COMMITMENTS AND CONTINGENCIES (Continued)

c) Contingencies (Continued)

The USDOC published the final results of the first administrative reviews in July 2015. As a result of these decisions, the duty rates applicable to the Company were revised to 9.67% (antidumping duty) and 20.94% (countervailing duty). The assessed rates were appealed to the CIT. The CIT affirmed the USDOC's countervailing duty rates, and no change was made to the Company's countervailing duty rate. This decision by the CIT was not appealed to the Federal Circuit. The CIT likewise affirmed USDOC's antidumping duty rates, and no change was made to the Company's antidumping duty rate. This decision by the CIT was, however, appealed to the Federal Circuit, which upheld the CIT's decision. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The USDOC published the final results of the second administrative reviews in June 2016 (antidumping duty) and July 2016 (countervailing duty). As a result of these decisions, the antidumping duty rate applicable to the Company was reduced to 8.52% (from 9.67%) and then to 3.96% (from 8.52%). Because the Company was not subject to the second administrative review of the countervailing duty order, its countervailing duty rate remained at 20.94%. The antidumping duty rates were appealed to the CIT. The CIT affirmed the USDOC's second antidumping duty rate. This decision by the CIT was appealed to the Federal Circuit, which in June 2020 reversed the CIT's decision, in part, and directed the USDOC to reconsider certain issues related to its final determination. The USDOC submitted its antidumping duty redetermination to the CIT in September 2021. In December 2021, the CIT sustained USDOC's antidumping duty redetermination. As a result, the Company's antidumping duty rate was reduced to 0.00% (from 3.96%). There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the third administrative reviews in June 2017 (antidumping duty) and July 2017 (countervailing duty), and later amended in October 2017. As result of these decisions, the duty rates applicable to the Company were changed to 13.07% (from 8.52%) (antidumping duty) and 18.16% (from 20.94%) (countervailing duty). The assessed rates were appealed to the CIT. The CIT has twice remanded the antidumping duty appeal to the USDOC to consider adjustments to the Company's rate. Pursuant to CIT's remand orders, the USDOC issued a redetermination. The antidumping duty rate applicable to the Company was reduced to 4.12% (from 13.07%) and then further to 3.19% (from 4.12%). In June 2020, the CIT issued its third opinion sustaining the USDOC's remand redetermination. The Company filed a motion for reconsideration with the CIT advocating for an even lower antidumping duty rate. In September 2020, the CIT granted the Company's motion for reconsideration and remanded to USDOC for further consideration of its antidumping duty rate. The USDOC submitted its antidumping duty redetermination to the CIT in September 2021. In December 2021, the CIT sustained USDOC's antidumping duty redetermination. As a result, the Company's antidumping duty rate was reduced to 0.00% (from 3.19%). There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final. The CIT has likewise twice remanded the countervailing duty appeal to the USDOC to consider adjustments to the Company's rate. In August 2020, the CIT sustained USDOC's second remand redetermination. As a result, the Company's countervailing duty rate was reduced to 7.36% (from 18.16%). There was no further appeal to the Federal Circuit of the USDOC's countervailing duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the fourth administrative reviews in July 2018 (both antidumping duty and countervailing duty), with the countervailing duty rate later amended in October 2018. Because the Company was not subject to the fourth administrative review of the antidumping duty order, its antidumping duty rate remained at 13.07%. In this review, the countervailing duty rate applicable to the Company was reduced to 11.59% (from 18.16%) for the broader Company and 10.64% (from 18.16%) for Canadian Solar International Limited. The countervailing duty rates were appealed to the CIT. The CIT remanded the countervailing duty appeal to the USDOC to consider adjustments to the Company's rate. Pursuant to the CIT's remand orders, the USDOC made a redetermination that reduced the Company's countervailing duty rate to 5.02% (from 11.59%) for the broader Company and 4.22% (from 10.64 percent) for Canadian Solar International Limited. The Company appealed the CIT decision to the Federal Circuit to contest USDOC's continued assessment of a countervailing duty rate related to the alleged electricity subsidy program. In January 2022, the Federal Circuit sustained the CIT's decision, and no change was made to the Company's countervailing duty rate. There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

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21. COMMITMENTS AND CONTINGENCIES (Continued)

b) Contingencies (Continued)

The USDOC published the final results of the fifth administrative reviews in July 2019 (antidumping duty) and August 2019 (countervailing duty). The antidumping duty rate applicable to the Company was lowered to 4.06% (from 13.07%). The countervailing duty rate applicable to the Company was reduced to 9.70% (from 11.59%). The countervailing duty final results were amended to correct ministerial errors in December 2019, but this amendment resulted in no change to the Company's 9.70% rate. The countervailing duty and antidumping duty rates were appealed to the CIT. Pursuant to the CIT's remand order in the antidumping appeal, USDOC made a remand redetermination that reduced the Company's antidumping duty rate to 3.30% (from 4.06%). In May 2021, the CIT sustained USDOC's antidumping duty redetermination. There was no further appeal to the Federal Circuit of the USDOC's antidumping duty redetermination and, therefore, this decision is final. The CIT remanded the countervailing duty appeal to the USDOC to consider adjustments to the Company's rate. Pursuant to the CIT's remand order in the countervailing duty appeal, USDOC made a remand redetermination that reduced the Company's countervailing duty rate to 3.65% (from 9.70%). In May 2022, the CIT sustained USDOC's countervailing duty redetermination. There was no further appeal to the Federal Circuit of the USDOC's countervailing duty redetermination and, therefore, this decision is final.

The USDOC published the final results of the sixth administrative reviews in October 2020 (antidumping duty) and December 2020 (countervailing duty). USDOC assessed an antidumping duty rate of 68.93% (from 13.07%). The antidumping duty final results were amended to correct ministerial errors in December 2020 and as a result, the antidumping duty rate applicable to the Company was raised to 95.50% (from 68.93%). USDOC assessed a countervailing duty rate of 12.67% (from 9.70%). The countervailing duty final results were amended to correct ministerial errors in April 2021 and, as a result, the Company's countervailing duty rate was reduced to 11.97% (from 12.67%). The antidumping duty rates were appealed to the CIT. The CIT remanded the antidumping duty appeal to the USDOC to consider adjustments to the Company's rate. Pursuant to the CIT's remand order, the USDOC made a redetermination that reduced the Company's antidumping duty rate to 23.02% (from 95.50%). This decision by the CIT was appealed to the Federal Circuit in March 2023, and the Company is currently participating in the appeal at the Federal Circuit. The Company did not appeal USDOC's final results of its sixth administrative review of the countervailing duty order and, therefore, this decision is final and the Company's countervailing duty rate is expected to remain at 11.97%.

The USDOC published the final results of the seventh administrative reviews in August 2021 (countervailing duty) and October 2021 (antidumping duty). The antidumping duty rate applicable to the Company was lowered to 0.00% (from 95.50%). The countervailing duty rate applicable to Canadian Solar International Limited ("CSIL") was raised to 19.28% (from 11.97%). USDOC did not change the rate of 11.97% for Canadian Solar Manufacturing (Changshu) Inc. and Canadian Solar Manufacturing (Luoyang) Inc. because the countervailing duty review was rescinded for both of these companies. The Company did not appeal USDOC's final results of its seventh administrative reviews and, therefore, these decisions are final. The Company's antidumping duty rate will remain at 0.00% and the Company's countervailing duty rate is expected to remain at 19.28% for CSIL.

The USDOC published the final results of the eighth administrative reviews in June 2022 (antidumping duty) and July 2022 (countervailing duty). The USDOC determined that the Canadian Solar entities subject to the eighth antidumping duty administrative review had no shipments during the period of review and therefore, the Company's antidumping duty rate (0.00%) will remain unchanged for its Solar 1 CSPV products. The antidumping duty final results were amended to correct ministerial errors in August 2022, but this amendment resulted in no change to USDOC's no shipment determination with respect to the Company. USDOC assessed a countervailing duty rate of 15.75% (from 19.28%). The countervailing duty final results were amended to correct ministerial errors in August 2022 and, as a result, the Company's countervailing duty rate was raised to 15.87% (from 15.75%). The Company did not appeal USDOC's final results of its eighth administrative review of the countervailing duty order and, therefore, this decision is final and the Company's countervailing duty rate is expected to remain at 15.87%.

The ninth and tenth antidumping duty and countervailing duty administrative reviews were initiated in February 2022 and February 2023 and are currently underway. The USDOC is currently scheduled to release the final results of the ninth antidumping and countervailing duty administrative reviews in May 2023, subject to potential extensions. The Company submitted no-shipment certifications in both the ninth and tenth administrative reviews. In its preliminary results, USDOC preliminarily determined that the Company had no shipments and stated its intent to rescind the review for the Company. The Company's countervailing duty rate, therefore, is expected to remain the same at 15.87%. USDOC will likely issue preliminary results of the tenth administrative reviews in late 2023 or early 2024.

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21. COMMITMENTS AND CONTINGENCIES (Continued)

b) Contingencies (Continued)

Between 2017 and 2019, the USDOC and USITC conducted five-year sunset reviews and determined to continue the Solar 1 antidumping and countervailing duty orders. In March 2018, the USDOC published the results of its expedited first sunset reviews and concluded that revocation of the Solar 1 orders would likely lead to a continuation or recurrence of dumping and a countervailable subsidy. The Company did not participate in USDOC's first sunset review. The Company did, however, participate in the USITC's first sunset review and requested that the Solar 1 duties be revoked. The USITC issued an affirmative determination in March 2019 declining to revoke the Solar 1 orders and finding that such revocation would be likely to lead to a continuation or recurrence of material injury to the U.S. industry within a reasonably foreseeable time. As a result, the Solar 1 orders remain in effect.

Solar 2

On December 31, 2013, SolarWorld Industries America, Inc. filed a new trade action with the USDOC and the USITC accusing Chinese producers of certain CSPV modules of dumping their products into the U.S. and of receiving countervailable subsidies from the Chinese authorities. This trade action also alleged that Taiwanese producers of certain CSPV cells and modules dumped their products into the U.S. Excluded from these new actions were those Chinese-origin solar products covered by the Solar 1 orders described above. The Company was identified as one of a number of Chinese producers exporting the Solar 2 subject goods to the U.S. market.

"Chinese CSPV products subject to Solar 2 orders" refers to CSPV products manufactured in mainland China using non-Chinese (e.g., Taiwanese) CSPV cells and imported into the U.S. during the investigation or administrative review periods of Solar 2. "Taiwanese CSPV products subject to Solar 2 orders" refer to CSPV products manufactured outside of mainland China using Taiwanese CSPV cells and imported into the U.S. during the investigation or review periods of Solar 2.

On December 23, 2014, the USDOC issued final affirmative determinations with respect to its antidumping and countervailing duty investigation on these CSPV products. On January 21, 2015, the USITC determined that imports of these CSPV products had caused material injury to the U.S. CSPV industry. As a result of these determinations, the Company is required to pay cash deposits on these CSPV products, the rates of which applicable to the Company's Chinese CSPV products were 30.06% (antidumping duty) and 38.43% (countervailing duty).

The USDOC's determination and the assessed countervailing duty rates were appealed to the CIT and the Federal Circuit. In March 2019, the Federal Circuit affirmed the CIT's decision confirming the USDOC's determination but reduced the Company's countervailing duty rate to 33.58% (from 38.43%). There was no further appeal to the U.S. Supreme Court and, therefore, this decision is final.

The antidumping cash deposit rate applicable to the Company's Taiwanese CSPV products subject to Solar 2 orders varied by solar cell producer. The Company paid all the cash deposits due under these determinations. There is no countervailing duty order on Taiwan Solar 2 products. The rates at which duties will be assessed and payable are subject to administrative reviews.

The USDOC published the final results of the first administrative reviews in July 2017 (China and Taiwan antidumping duty orders) and September 2017 (China-only countervailing duty order). Because the Company was not subject to the first administrative reviews of the Solar 2 orders, the Company's duty rates will remain at 30.06% (antidumping duty) and 33.58% (countervailing duty) for the Company's Chinese CSPV products. The Company's antidumping duty rates for the Company's Taiwanese CSPV products had ranged from 3.56% to 4.20%, until they were changed to 1.52% to 3.78% in June 2019.

The second administrative reviews for the Solar 2 China antidumping and countervailing duty orders were rescinded, meaning that there is no change in the Chinese antidumping and countervailing duty rates applicable to the Company's Chinese CSPV products 30.06% (antidumping duty) and 33.58% (countervailing duty). The USDOC published the final results of the second administrative review for the Taiwan antidumping duty order (there is no countervailing duty order) in June 2018. The rate applicable to the Company is 1.33%. There is no ongoing litigation related to the Taiwan antidumping duty rate.

The Company was not subject to the third administrative reviews of the Chinese orders and, therefore, the Company's duty rates remained unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for the Company's Chinese CSPV products. The third administrative review of the Taiwan antidumping order concluded in mid-2019. The rate assessed to the Company was 4.39% (from 1.33%). There is no ongoing litigation related to the Taiwan antidumping duty rate.

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21. COMMITMENTS AND CONTINGENCIES (Continued)

b) Contingencies (Continued)

The USDOC rescinded the fourth administrative reviews of the Solar 2 China antidumping duty and countervailing duty orders in late 2019. The Company's duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for the Company's Chinese CSPV products. The rate assessed to the Company in the fourth administrative review of the Taiwan antidumping order was 2.57% (from 4.39%). The USDOC also found that certain Canadian Solar entities had no shipments during this period of this review.

The USDOC rescinded the fifth administrative reviews of the Solar 2 China antidumping and countervailing duty orders. The Company's duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for the Company's Chinese CSPV products. The USDOC published the final results of the fifth administrative review of the Taiwan antidumping duty order in September 2021. The USDOC determined that the Canadian Solar entities subject to the fifth administrative review had no shipments during the period of review and therefore, the Company's antidumping duty rates will remain unchanged for its Taiwanese CSPV products.

The USDOC did not initiate the sixth administrative reviews of the Solar 2 China antidumping and countervailing duty orders because no parties requested reviews. The Company's duty rates will remain unchanged at 30.06% (antidumping duty) and 33.58% (countervailing duty) for its Chinese CSPV products. The USDOC published the final results of the sixth administrative review of the Taiwan antidumping duty order in March 2022. The USDOC determined that the Canadian Solar entities subject to the sixth administrative review had no shipments during the period of review and therefore, the Company's antidumping duty rates will remain unchanged for its Taiwanese CSPV products.

The USDOC initiated the seventh administrative reviews of the Solar 2 China antidumping and countervailing duty orders in April 2022. The countervailing duty review was not initiated with respect to the Company and therefore, the Company's countervailing duty rates (33.58%) will remain unchanged for its Solar 2 China CSPV products. The USDOC rescinded the seventh administrative review of the Solar 2 Taiwan antidumping duty order in October 2022 and therefore, the Company's antidumping duty rates will remain unchanged for its Solar 2 Taiwan CSPV products. The USDOC initiated the seventh administrative review of the Solar 2 China antidumping duty order in April 2022 with respect to certain of the Canadian Solar entities. The USDOC rescinded the seventh administrative review of the Solar 2 China antidumping duty order in March 2023 with respect to the Canadian Solar entities and therefore, the Company's antidumping duty rates will remain unchanged for its Solar 2 China CSPV products.

The USDOC initiated the eighth administrative review of the Solar 2 China antidumping duty order in April 2023 with respect to certain of the Canadian Solar entities. The USDOC will likely issue the preliminary results of the eighth administrative review in late 2023 or early 2024, subject to potential extensions. The USDOC did not initiate the eighth administrative review of the Solar 2 China countervailing duty order because no parties requested reviews and therefore, the Company's countervailing duty rates (33.58%) will remain unchanged for its Solar 2 China CSPV products. The USDOC initiated the eighth administrative review of the Solar 2 Taiwan antidumping duty order in April 2023, however, the review was not initiated with respect to the Company and therefore, the Company's antidumping duty rates will remain unchanged for its Taiwanese CSPV products.

In 2020, the USDOC and USITC conducted five-year sunset reviews and determined to continue the Solar 2 antidumping and countervailing duty orders. In May 2020, the USDOC published the results of its expedited first sunset reviews and concluded that revocation of the Solar 2 orders would likely lead to a continuation or recurrence of dumping and a countervailable subsidy. The USITC issued an affirmative determination on September 4, 2020, declining to revoke the Solar 2 orders and finding that such revocation would be likely to lead to a continuation or recurrence of material injury to the U.S. industry within a reasonably foreseeable time. As a result, the Solar 2 orders are expected to remain in effect through at least 2025.

Section 201

On May 17, 2017, following receipt of a petition from Suniva, Inc., which was later joined by SolarWorld Americas, Inc., the USITC instituted a safeguard investigation to determine whether there were increased imports of CSPV products in such quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing like or directly competitive products. On September 22, 2017, the USITC determined that CSPV products are being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industry.

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21. COMMITMENTS AND CONTINGENCIES (Continued)

b) Contingencies (Continued)

On January 23, 2018, the President of the United States imposed a safeguard measure on imports of CSPV cells, whether or not partially or fully assembled into other products such as modules, consisting of (1) a tariff-rate quota for four years on imports of CSPV cells not partially or fully assembled into other products, with (a) an in-quota quantity of 2.5 gigawatts, and (b) a tariff rate applicable to over-quota CSPV cells of 30%, declining annually by five percentage points to 25% in the second year, 20% in the third year, and 15% in the fourth year; and (2) a 30% tariff for four years on CSPV modules, declining annually by five percentage points to 25% in the second year, 20% in the third year, and 15% in the fourth year. This safeguard measure, which became effective on February 7, 2018, applies to CSPV products imported from all countries, except for certain developing country members of the World Trade Organization.

On June 13, 2019 and following an abbreviated public comment period, the Office of the U.S. Trade Representative (or USTR) granted an exclusion from the safeguard measure for solar panels comprising solely bifacial solar cells (or bifacial solar panels). In October 2019, USTR determined to withdraw this exclusion. Invenergy Renewables LLC (or Invenergy) promptly contested USTR's withdrawal determination at the CIT and secured a temporary restraining order against USTR in November 2019. In December 2019, the CIT preliminarily enjoined USTR's withdrawal due to procedural deficiencies. USTR then sought and was granted a voluntary remand to reconsider its withdrawal determination for bifacial solar panels.

In early 2020, USTR conducted a renewed notice-and-comment process regarding the exclusion for bifacial solar panels from the safeguard measures. In April 2020, USTR again determined that the exclusion for bifacial solar panels should be withdrawn based on the findings of its second notice-and-comment process. Notwithstanding, in May 2020 the CIT denied without prejudice the United States' motion to dissolve the preliminary injunction and to resume the collection of the safeguard tariff on entries of bifacial modules. USTR appealed the CIT's interlocutory decision to the Federal Circuit in July 2020, but subsequently dismissed its appeal in January 2021. The United States continued to litigate the merits of USTR's April 2020 withdrawal of the bifacial exclusion before the CIT. On November 17, 2021, the CIT vacated USTR's April 2020 withdrawal in *Invenergy Renewables LLC v. United States*. The CIT's judgment holding USTR's April 2020 withdrawal of the bifacial exclusion unlawful was not appealed to the Federal Circuit and, therefore, this decision is final.

In early 2020, the USITC conducted a midterm review of the safeguard order, issuing its monitoring report in February 2020. Additionally, in March 2020, at the request of the USTR, the USITC released a report regarding the probable economic effect on the domestic CSPV cell and module manufacturing industry of modifying the safeguard measure on CSPV products. The USITC found that increasing the tariff-rate quota (TRQ) on CSPV cells (an integral component of CSPV modules) would likely result in a substantial increase in U.S. module producers' production, capacity utilization, and employment.

The President must consider the USITC's views but is not required to follow them or to take any action in the safeguard midterm review. On October 10, 2020, President Trump issued Proclamation 10101 pertaining to the midterm review. Proclamation 10101 authorized the following: (1) the revocation of the bifacial module exclusion effective October 25, 2020; (2) the reduction of the safeguard tariff to 18% *ad valorem* (as opposed to 15% *ad valorem* as prescribed in the original safeguard measures) effective February 7, 2021; and (3) the delegation to USTR of the President's authority to ask the USITC to assess whether the safeguard measures should be extended. The President decided not to follow the USITC's recommendation to increase the TRQ applicable to CSPV cells.

Following the issuance of Proclamation 10101, Invenergy and other plaintiffs (AES Distributed Energy, Inc., Clearway Energy Group LLC, EDF Renewables, Inc. ("EDF"), the Solar Energy Industries Association ("SEIA")) sought to challenge the Proclamation and filed motions to amend their complaints with the CIT. The CIT ultimately denied plaintiffs' motions and refused to extend the bifacial module exclusion beyond October 24, 2020 as a consequence of the Proclamation (as opposed to USTR's withdrawals). Subsequently, on December 29, 2020, Invenergy and another set of plaintiffs (SEIA, NextEra Energy, Inc., and EDF) commenced new and separate litigation once again challenging Proclamation 10101 in the CIT. This new complaint alleges that the President unlawfully terminated the bifacial module exclusion and revised the safeguard tariff, effective February 7, 2021, to be 18% *ad valorem* (as opposed to the originally announced 15% *ad valorem*).

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21. COMMITMENTS AND CONTINGENCIES (Continued)

b) Contingencies (Continued)

On November 16, 2021, the CIT held in *Solar Energy Industries Association et al. v. United States (SEIA)* that the President acted outside of his statutory authority in issuing Proclamation 10101, and enjoined the Government from enforcing that proclamation. This judgment had the effect of reinstating the exclusion of bifacial modules from the safeguard tariffs and lowering the fourth year safeguard tariff to 15% ad valorem. On January 14, 2022, the Government filed a notice of appeal of SEIA to the Federal Circuit and the appeal remains ongoing. The Federal Circuit held oral argument on April 3, 2023, and the Federal Circuit's decision is expected in mid to late 2023. In October 2022, Canadian Solar filed an appeal at the U.S. Court of International Trade ("CIT") challenging U.S. Customs and Border Protection's erroneous collection of certain Section 201 safeguard duties on bifacial panels pursuant to Proclamation 10101, which the CIT ruled "null and void" in SEIA. Canadian Solar's appeal is stayed pending resolution of the SEIA appeal at the Federal Circuit.

In 2021, the USITC conducted an extension investigation of the safeguard measure, in response to petitions by representatives of the domestic industry. In December 2021, the USITC issued its determination and report finding that the safeguard order continues to be necessary to prevent or remedy the serious injury to the domestic industry, and that there is evidence that the domestic industry is making a positive adjustment to import competition. On February 4, 2022, President Biden issued a Proclamation extending the safeguard measure on U.S. imports of CSPV products for four years until February 6, 2026. The extended safeguard measure doubles the volume of the TRQ on imported CSPV cells to 5.0 gigawatts and maintains a tariff on imports of CSPV modules and above-quota CSPV cells, beginning at a rate of 14.75% ad valorem and declining annually by 0.25 percentage points to 14.50% in the sixth year, 14.25% in the seventh year, and 14.0% in the eighth year. The extended safeguard measure excludes bifacial panels.

CSPV cells and modules from Canada are no longer subject to the safeguard measure as of February 1, 2022 following the United States and Canada's entrance into a memorandum of understanding to resolve a dispute under the U.S.-Mexico-Canada Agreement.

Canadian Antidumping and Countervailing Duties Expiry Review

On June 3, 2015, the Canada Border Services Agency ("CBSA") released final determinations regarding the dumping and subsidization of solar modules and laminates originating from China. The CBSA determined that such goods were dumped and subsidized. The CBSA found Canadian Solar to be a "cooperative exporter" and, as such, ascertained a low (relative to other Chinese exporters) Canadian Solar-specific subsidies rate of RMB0.014 per Watt. On July 3, 2015 the Canadian International Trade Tribunal ("CITT") determined that the Canadian industry was not negatively affected as a result of imported modules but was threatened with such negative impact. As a result of these findings, definitive duties were imposed on imports of Chinese solar modules into Canada starting on July 3, 2015. The CITT may initiate an expiry review pursuant to Subsection 76.03(3) of the Special Import Measures Act ("SIMA") before the end of 5 years of its finding. If the CITT does not initiate such an expiry review pursuant to Subsection 76.03(3) of SIMA, the finding is deemed to have been rescinded as of the expiry of the five years.

On April 1, 2020, the CITT initiated the preliminary stage of the expiry review regarding the above finding. The expiry review was concluded on March 25, 2021. The CITT determined to continue its aforementioned finding to impose definitive duties on imports of Chinese solar modules and laminates into Canada. As a result, the Canadian Solar-specific subsidies rate of RMB0.014 per Watt remains unchanged. The subsidies rate applies for a period of five years. The CITT is required to conduct a further expiry review at the end of that period, being July 2, 2025. Such subsidies rate does not have a material negative effect upon the Company's results of operations because it has module manufacturing capacity in Ontario and do not rely on Chinese solar modules to serve its Canadian business.

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22. SEGMENT INFORMATION

The Company uses the management approach to determine operating segments. The management approach considers the internal organization and reporting used by the Company's chief operating decision maker ("CODM") for making decisions, allocating resources and assessing performance. The Company's CODM has been identified as the Chief Executive Officer of the Company, since he reviews consolidated and segment results when making decisions about allocating resources and assessing performance of the Company.

From 2016 through the third quarter of 2020, the Company had been operating in two principal businesses: MSS and Energy. The MSS business comprised primarily the design, development, manufacture and sale of solar modules, other solar power products and solar system kits. The MSS business also provided engineering, procurement and construction (EPC) services. The Energy business comprised primarily the development and sale of solar power projects, operating solar power projects, the sale of electricity and operating and maintenance (O&M) services. The module sales from the Company's MSS business to its Energy business were on terms and conditions similar to sales to third parties.

In July 2020, the Company reached a strategic decision to pursue a listing of its subsidiary, CSI Solar Co., Ltd., in China. From November 2021, the Company completed the transfer of the China solar power system and project assets from CSI Solar to the Global Energy segment to avoid any potential competition between the Company and its CSI Solar subsidiary, as part of the CSI Solar carve-out listing process. To align with the objective of ASC 280, Segment Reporting ("Topic 280") and present the Company's disaggregated financial information consistent with the management approach, the Company reports its financial performance, including revenue, gross profit and income from operations, based on the following two reportable segments:

- **CSI Solar**, which consists of solar module manufacturing and total system solutions, including inverters, solar system kits and EPC (engineering, procurement and construction) services. The CSI Solar segment also includes the Company's battery storage integration business, delivering bankable, end-to-end, turnkey battery storage solutions for utility scale, commercial and industrial, and residential applications. These storage systems solutions are complemented with long-term service agreements, including future battery capacity augmentation services.
- **Global Energy**, which carries out the Company's global project development activities for both solar and battery storage project development, which include sourcing land, interconnection agreements, structuring power purchase agreements (PPAs), obtaining permits and other requirements. The Global Energy segment develops both stand-alone solar and stand-alone battery storage projects, as well as hybrid solar plus storage projects. Its monetization strategies vary between develop-to-sell, build-to-sell, and build-to-own, depending on business strategies and market conditions, with the goal of maximizing returns, accelerating cash turn and minimizing capital risk.

The module, EPC and battery storage solutions sales from the Company's CSI Solar business to its Global Energy business are on terms and conditions similar to sales to third parties.

The Company continually monitors and reviews its segment reporting structure in accordance with Topic 280 to determine whether any changes have occurred that would impact its reportable segments.

The Company's CODM reviews net revenue and gross profit and does not review balance sheet information by segment.

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22. SEGMENT INFORMATION (Continued)

The following table summarizes the Company's revenues, gross profit and income from operations generated from each segment:

	Years Ended December 31, 2022			
	CSI Solar	Global Energy	Elimination and unallocated items ⁽¹⁾	Total
	\$	\$	\$	\$
Net revenues	6,975,612	821,525	(328,527)	7,468,610
Cost of revenues	5,824,855	660,161	(279,542)	6,205,474
Gross profit	<u>1,150,757</u>	<u>161,364</u>	<u>(48,985)</u>	<u>1,263,136</u>
Income from operations ⁽²⁾	343,798	80,364	(68,101)	356,061

	Years Ended December 31, 2021			
	CSI Solar	Global Energy	Elimination and unallocated items ⁽¹⁾	Total
	\$	\$	\$	\$
Net revenues	4,371,603	1,124,083	(218,517)	5,277,169
Cost of revenues	3,689,126	930,099	(251,368)	4,367,857
Gross profit	<u>682,477</u>	<u>193,984</u>	<u>32,851</u>	<u>909,312</u>
Income from operations ⁽²⁾	74,132	97,179	19,070	190,381

	Years Ended December 31, 2020			
	CSI Solar	Global Energy	Elimination and unallocated items ⁽¹⁾	Total
	\$	\$	\$	\$
Net revenues	3,105,044	726,167	(354,716)	3,476,495
Cost of revenues	2,496,153	577,052	(286,624)	2,786,581
Gross profit	<u>608,891</u>	<u>149,115</u>	<u>(68,092)</u>	<u>689,914</u>
Income from operations ⁽²⁾	253,105	53,414	(86,089)	220,430

(1) Includes inter-segment elimination, and unallocated corporate costs not considered part of management's evaluation of reportable segment operating performance.

(2) Income from operations reflects management's allocation and estimate as some services are shared by the Company's two reportable segments.

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22. SEGMENT INFORMATION (Continued)

During the years ended December 31, 2020, 2021 and 2022, \$11,854, \$6,084 and \$60,330 of long-lived asset impairment charges, respectively, were recorded related to property, plant and equipment in CSI Solar segment. In addition, the Company recorded \$24,060, nil and \$357 of investment impairment in the CSI Solar segment, and \$369, \$17,152 and \$1,674 of project assets impairment in the Global Energy segment, and for the years ended December 31, 2020, 2021 and 2022, respectively.

The following table summarizes the Company's net revenues generated from different geographic locations. The information presented below is based on the location of customers' global or regional headquarters, as appropriate:

	Years Ended December 31,		
	2020	2021	2022
	\$	\$	\$
The Americas:			
—United States	696,101	1,590,573	1,963,956
—Brazil	284,478	442,603	623,331
—Canada	100,284	30,792	49,148
—Chile	4,872	18,461	37,370
—Mexico	118,846	139,611	31,912
—Others	16,524	57,554	87,934
	<u>1,221,105</u>	<u>2,279,594</u>	<u>2,793,651</u>
Asia:			
—PRC	504,656	1,207,003	1,904,862
—Japan	560,701	509,233	325,344
—India	61,141	142,300	197,772
—Pakistan	15,417	48,838	73,531
—Taiwan	24,422	7,702	67,411
—Hong Kong	13,571	9,979	46,254
—United Arab Emirates	53,981	6,168	15,974
—Thailand	6,108	59,451	9,941
—Vietnam	289,621	19,956	9,078
—Others	91,222	128,440	89,612
	<u>1,620,840</u>	<u>2,139,070</u>	<u>2,739,779</u>
Europe and other regions:			
—Spain	138,972	100,658	434,841
—Australia	120,403	165,772	393,959
—Germany	119,035	231,995	322,189
—Netherlands	96,372	104,715	136,375
—South Africa	49,375	90,761	118,458
—United Kingdom	8,842	7,749	106,662
—Czech	16,144	34,604	79,414
—Ireland	—	7,844	63,740
—Romania	1,258	3,699	31,804
—France	29,974	25,980	31,147
—Others	54,175	84,728	216,591
	<u>634,550</u>	<u>858,505</u>	<u>1,935,180</u>
Total net revenues	<u><u>3,476,495</u></u>	<u><u>5,277,169</u></u>	<u><u>7,468,610</u></u>

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22. SEGMENT INFORMATION (Continued)

The following table summarizes the Company's long-lived assets, including property, plant and equipment, non-current project assets, solar power systems, and intangible assets at December 31, 2021 and 2022 by geographic region, based on the physical location of the assets:

	At December 31, 2021	At December 31, 2022
	\$	\$
PRC	1,252,189	1,668,177
Thailand	266,870	276,497
Brazil	710	242,761
Argentina	68,508	66,017
EU	1,824	27,182
Japan	16,413	14,440
Canada	9,269	6,200
United States	5,499	5,545
Others	14,147	5,770
Total long-lived assets	<u>1,635,429</u>	<u>2,312,589</u>

The following table summarizes the Company's revenues generated from each product or service:

	Years Ended December 31,		
	2020	2021	2022
	\$	\$	\$
CSI Solar:			
Solar modules	2,348,724	3,328,301	5,534,379
Solar system kits	157,656	302,133	538,157
Utility-scale battery storage	7,899	222,655	440,030
Residential battery storage	—	—	686
China energy/EPC (includes electricity sales)	175,388	178,830	35,711
Others	60,661	121,167	98,122
Global Energy:			
Solar and battery storage projects	654,827	1,064,178	761,677
O&M and asset management services	26,386	35,334	33,776
Others (includes electricity sales)	44,954	24,571	26,072
Total net revenues	<u>3,476,495</u>	<u>5,277,169</u>	<u>7,468,610</u>

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23. MAJOR CUSTOMERS

No customers accounted for 10% or more of total net revenues for the years ended December 31, 2020, 2021 and 2022. No customers accounted for 10% or more of total net accounts receivable, net as of December 31, 2021 and 2022.

24. EMPLOYEE BENEFIT PLANS

Employees of the Company located in the PRC are covered by the retirement schemes defined by local practice and regulations, which are essentially defined contribution schemes. The calculation of contributions for eligible employees is based on 16% of the applicable payroll cost in 2022. The expense incurred by the Company to these defined contributions schemes was \$8,064, \$14,362 and \$17,753 for the years ended December 31, 2020, 2021 and 2022, respectively.

In addition, in 2022, the Company is required by PRC law to contribute approximately 6-8.5%, 8%, 0.5-0.7% and 0.9-2.5% of applicable salaries for medical insurance benefits, housing funds, unemployment and other statutory benefits, respectively. The PRC government is directly responsible for the payment of the benefits to these employees. The amounts contributed for these benefit schemes were \$11,486, \$13,584 and \$15,918 for the years ended December 31, 2020, 2021 and 2022, respectively.

25. SHARE-BASED COMPENSATION

In March 2006, the Company adopted a share incentive plan, or the Plan. The purpose of the Plan is to promote the success and enhance the value of the Company by linking the personal interests of the directors, employees and consultants to those of the shareholders and providing the directors, employees and consultants with an incentive for outstanding performance to generate superior returns to the shareholders. The Plan is also intended to motivate, attract and retain the services of the directors, employees and consultants upon whose judgment, interest and effort the successful conduct of the Company's operations is largely dependent. In September 2010, the shareholders approved an amendment to the Plan to increase the maximum number of common shares which may be issued pursuant to all awards of options, restricted shares and RSUs under the Plan to the sum of (i) 2,330,000 plus (ii) the sum of (a) 1% of the number of outstanding common shares of the Company on the first day of each of 2007, 2008 and 2009 and (b) 2.5% of the number of outstanding common shares of the Company outstanding on the first day of each calendar year after 2009. In June 2020, the shareholders approved an amendment to the Plan to extend the term of the Plan for a further ten years period. As a result, the Plan will expire on, and no awards may be granted after June 30, 2029. Under the terms of the Plan, options are generally granted with an exercise price equal to the fair market value of the Company's ordinary shares and expire ten years from the date of grant.

Options Activities

During the year ended December 31, 2021 and 2022, no options were exercised. The total intrinsic value of options exercised during the years ended December 31, 2020 was \$893. As of December 31, 2022, there were 26,291 options outstanding with a weighted average exercise price of \$9.33 and weighted average remaining contract terms of 0.4 year. The intrinsic value of outstanding options as of December 31, 2022 was \$567. No compensation cost on options was recognized in the years ended December 31, 2020, 2021 and 2022.

RSUs Activities

The Company granted 1,105,640, 2,161,098 and 444,167 RSUs in 2020, 2021 and 2022, respectively. The RSUs entitle the holders to receive the Company's common shares upon vesting.

The RSUs were granted for free and generally vest over periods from one to four years based on the specific terms of the grants. In 2020, 2,096,000 of the RSUs granted were made to the Company's directors and a group of key employees, whereby vesting is contingent on the successful carve-out IPO of CSI Solar Co., Ltd. (50% vesting on the IPO date, then 25% vesting each on the first and second anniversaries of the IPO). The average grant date fair value of these awards contingent on the IPO was \$25.69 per award. As of December 31, 2022, 2,036,000 of such RSUs were unvested and outstanding. 205,000 of the RSUs granted on October 25, 2022 are contingent on certain performance condition (50% vesting on achieving the performance condition, then 25% vesting each on the first and second anniversaries of the achievement). As of December 31, 2022, 205,000 of such RSUs were unvested and outstanding.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

25. SHARE-BASED COMPENSATION (Continued)**RSUs Activities (Continued)**

The fair market value of the Company's ordinary shares at the date of grant resulted in total compensation cost of approximately \$24,918, \$55,822 and \$12,909 that will be recognized ratably over the vesting period for the RSUs granted in 2020, 2021 and 2022, respectively. In the years ended December 31, 2020, 2021 and 2022, the Company recognized \$12,350, \$8,808 and \$9,370 in compensation expense associated with these awards, respectively.

As of December 31, 2022, there was \$17,940 of total unrecognized share-based compensation related to unvested RSUs, excluding awards contingent on the IPO as described above, which is expected to be recognized over a weighted-average period of 2.0 years.

A summary of the RSU activity is as follows:

	Number of Shares	Weighted Average Grant-Date Fair Value (in whole US dollars)
Unvested at January 1, 2022	3,335,303	24.23
Granted	444,167	29.86
Vested	(483,377)	19.41
Forfeited	(106,717)	27.03
Unvested at December 31, 2022	<u>3,189,376</u>	<u>25.65</u>

The total fair value of RSUs vested during the years ended December 31, 2020, 2021 and 2022 was \$14,420, \$21,628 and \$13,276, respectively.

As of December 31, 2022, there was \$68,689 of total gross unrecognized share-based compensation related to awards contingent on the IPO, and upon satisfaction of performance condition, this cost is expected to be recognized based on the ESOP scheme vesting condition and the RSU vesting period described above.

26. SUBSEQUENT EVENT

On March 21, 2023, the Company announced the approval of the IPO of CSI Solar Co., Ltd. by China Securities Regulatory Commission on the Science and Technology Innovation Board (the "STAR Market") of the Shanghai Stock Exchange (the "SSE").

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

Additional Information — Condensed Financial Statements of Parent Company
Canadian Solar Inc.

The following condensed financial statements of Canadian Solar Inc. has been provided pursuant to the requirements of Rule 12-04(a) and 4-08(e)(3) of Regulation S-X, which require condensed financial information as to financial position, cash flows and results of operations of a parent company as of the same dates and for the same periods for which audited consolidated financial statements have been presented as the restricted net assets of Canadian Solar Inc.'s consolidated and unconsolidated subsidiaries not available for distribution to Canadian Solar Inc. as of December 31, 2022 of \$658,166, exceeded the 25% threshold.

The condensed financial information has been prepared using the same accounting policies as set out in the consolidated financial statements, except that the equity method has been used to account for investments in subsidiaries. The Company's share of income from its subsidiaries is reported as equity in earnings of subsidiaries in the condensed financial statements. These statements should be read in conjunction with the notes to the consolidated financial statements of the Company. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted.

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)
FINANCIAL INFORMATION OF PARENT COMPANY
BALANCE SHEETS

	December 31, 2021	December 31, 2022
	(In Thousands of U.S. Dollars, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	27,432	15,661
Amounts due from subsidiaries	638,832	582,685
Derivative assets	521	—
Prepaid expenses and other current assets	5,318	13,218
Total current assets	672,103	611,564
Investments in subsidiaries	1,992,658	2,158,474
Investments in affiliates	10,755	11,745
Deferred tax assets	1,946	1,755
Other non-current assets	45,213	39,837
TOTAL ASSETS	2,722,675	2,823,375
LIABILITIES AND EQUITY		
Current liabilities:		
Amounts due to subsidiaries	682,247	640,055
Derivative liabilities	—	762
Other current liabilities	5,676	4,522
Total current liabilities	687,923	645,339
Convertible notes	224,675	225,977
Deferred tax liabilities	1,562	4,690
Liability for uncertain tax positions	7,432	5,730
TOTAL LIABILITIES	921,592	881,736
Equity:		
Common shares — no par value: unlimited authorized shares, 64,022,678 and 64,506,055 shares issued and outstanding at December 31, 2021 and 2022, respectively	835,543	835,543
Additional paid-in capital	(19,428)	1,127
Retained earnings	1,035,552	1,275,520
Accumulated other comprehensive loss	(50,584)	(170,551)
TOTAL EQUITY	1,801,083	1,941,639
TOTAL LIABILITIES AND EQUITY	2,722,675	2,823,375

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

FINANCIAL INFORMATION OF PARENT COMPANY
STATEMENTS OF OPERATIONS

	Years Ended December 31.		
	2020	2021	2022
	(In Thousands of U.S. Dollars)		
Net revenues	2,170	341	—
Cost of revenues	—	—	—
Gross profit	2,170	341	—
Operating expenses:			
Selling and distribution expenses	2,174	766	890
General and administrative expenses	49,688	9,177	11,261
Research and development expenses	692	182	155
Other operating income, net	—	(282)	—
Total operating expenses	52,554	9,843	12,306
Loss from operations	(50,384)	(9,502)	(12,306)
Other income (expenses):			
Interest expense	(9,628)	(19,677)	(23,229)
Interest income	30,536	20,249	20,563
Gain (loss) on change in fair value of derivatives, net	25,341	4,043	(844)
Foreign exchange gain (loss), net	13,768	(3,674)	616
Other income (expenses), net:	60,017	941	(2,894)
Income (loss) before income taxes and equity in earnings of subsidiaries	9,633	(8,561)	(15,200)
Income tax benefit (expense)	(34,223)	2,424	8,786
Equity in earnings of subsidiaries	171,293	101,385	246,382
Net income	146,703	95,248	239,968

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

FINANCIAL INFORMATION OF PARENT COMPANY
STATEMENTS OF COMPREHENSIVE INCOME

	Years Ended December 31.		
	2020	2021	2022
Net income	146,703	95,248	239,968
Other comprehensive income (loss) (net of tax)	80,928	(21,905)	(120,511)
Comprehensive income	<u>227,631</u>	<u>73,343</u>	<u>119,457</u>

CANADIAN SOLAR INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)
FOR THE YEARS ENDED DECEMBER 31, 2020, 2021 and 2022
(In Thousands of U.S. Dollars, unless otherwise indicated)

FINANCIAL INFORMATION OF PARENT COMPANY
STATEMENTS OF CASH FLOWS

	Years Ended December 31.		
	2020	2021	2022
	(In Thousands of U.S. Dollars)		
Operating activities:			
Net income	146,703	95,248	239,968
Adjustments to reconcile net income to net cash provided by provided by (used in) operating activities:			
Depreciation and amortization	156	150	—
Accretion of convertible notes	388	1,461	1,302
Loss (gain) on change in fair value of derivatives	(25,341)	(4,043)	844
Allowance for credit losses	357	—	—
Equity in earnings of subsidiaries	(171,293)	(101,385)	(246,382)
Share-based compensation	12,350	8,808	9,370
Deferred taxes	(468)	805	3,319
Changes in operating assets and liabilities:			
Amounts due from subsidiaries	287,865	(206,892)	10,990
Prepaid expenses and other current assets	(13,183)	17,353	(7,900)
Other non-current assets	28,459	(4,907)	10
Amounts due to subsidiaries	(340,502)	(42,224)	38,610
Other current liabilities	31,809	(27,293)	(1,154)
Liability for uncertain tax positions	306	(5,915)	(1,702)
Net settlement of derivatives	19,517	4,633	439
Net cash provided by (used in) operating activities	(22,877)	(264,201)	47,714
Investing activities:			
Investments in subsidiaries	(126,487)	(138,456)	(65,421)
Investments in affiliates	(2,766)	(5,273)	(990)
Loans to subsidiaries	(264,848)	(201,192)	(122,050)
Repayment of loans to subsidiaries	20,485	253,816	172,573
Net cash used in investing activities	(373,616)	(91,105)	(15,888)
Financing activities:			
Proceeds from (repayment of) short-term borrowings	30,000	(80,000)	—
Repayment of loan from subsidiary	—	—	(49,554)
Loan from a subsidiary	—	280,000	—
Net proceeds from issuance of common shares	—	148,510	—
Proceeds from changes in ownership interests in subsidiaries without change of control	224,553	—	—
Net proceeds from issuance of convertible notes	222,826	—	—
Payments for repurchase of common shares	(5,963)	—	—
Proceeds from exercise of stock options	1,035	—	—
Net cash provided by (used in) financing activities	472,451	348,510	(49,554)
Effect of exchange rate changes	(43,246)	(797)	5,957
Net increase (decrease) in cash, cash equivalents and restricted cash	32,712	(7,593)	(11,771)
Cash, cash equivalents and restricted cash at the beginning of the year	2,313	35,025	27,432
Cash, cash equivalents and restricted cash at the end of the year	35,025	27,432	15,661
Supplemental disclosure of cash flow information:			
Interest paid (net of amounts capitalized)	7,966	20,272	30,521

Certificate of Continuance

Business Corporations Act

Certificat de maintien

Loi sur les sociétés par actions

CANADIAN SOLAR INC.

Corporation Name / Dénomination sociale

1497760

Ontario Corporation Number / Numéro de société de l'Ontario

This is to certify that these articles are effective on

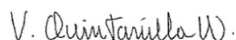
La présente vise à attester que ces statuts entreront en
vigueur le

July 29, 2022 / 29 juillet 2022



Director / Directeur

Business Corporations Act / Loi sur les sociétés par actions

The Certificate of Continuance is not complete
without the Articles of ContinuanceCertified a true copy of the record of the
Ministry of Government and Consumer Services.

Director/Registrar

Le certificat de maintien n'est pas complet s'il ne
contient pas les statuts de maintienCopie certifiée conforme du dossier du
ministère des Services gouvernementaux et des
Services aux consommateurs.

Directeur ou registrateur



Articles of Continuance

Business Corporations Act

1. Corporation Name

CANADIAN SOLAR INC.

2. Date of Incorporation/Amalgamation

October 22, 2001

3. Name of jurisdiction the corporation is leaving

Canada - British Columbia

4. The continuance was authorized by home jurisdiction on

July 19, 2022

5. The corporation is continued in Ontario under the name

CANADIAN SOLAR INC.

6. Registered Office Address

66 Wellington Street West, 4100, Toronto, Ontario, Canada, M5K 1B7

7. Number of Directors

Minimum/Maximum

Min 3 / Max 10

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V. Quintanilla W.

Director/Registrar, Ministry of Government and Consumer Services

8. The director(s) is/are:

Full Name

Huifeng CHANG

3000 Oak Road, #400, Walnut Creek, California, United States,
94597

Address for Service

Full Name

Leslie Li Hsien CHANG

8a Tregunter Tower Two 14 Tregunter Path Mid Level, Hong
Kong, ., China, .

Address for Service

Full Name

Karl E. OLSONI

721 Woodhaven Lane, Naples, Florida, United States, 34108

Address for Service

Full Name

Xiao Hua (shawn) QU

199 Lushan Road, Suzhou New District, ., China, 215129

Address for Service

Full Name

Harry E. RUDA

21 Brookfield Road, Toronto, Ontario, Canada, M2P 1B1

Address for Service

Full Name

Lauren C. TEMPLETON

115 Maple Avenue, Lookout Mountain, Tennessee, United
States, 37350

Address for Service

Full Name

Andrew (Iuen Cheung) WONG

Flat B, 19/f Tower One, The Leighton Hill 2 Boardwood Road,
Happy Valley, Hong Kong, ., China, .

Address for Service

Full Name

Arthur (Iap Tat) WONG

1208 Dragon Bay Villa Hou Sha Yu, Shun Yi District, ., China,
101302

Address for Service

Full Name

Yan ZHUANG

199 Lushan Road Suzhou New District, Suzhou, ., China, 215129

Address for Service

9. Restrictions, if any, on business the corporation may carry on or on powers the corporation may exercise. If none, enter

"None":

None

10. The classes and any maximum number of shares that the corporation is authorized to issue:

An unlimited number of common shares and an unlimited number of preferred shares, issuable in series.

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11. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors' authority with respect to any class of shares which may be issued in series. If there is only one class of shares, enter "Not Applicable":

The rights, privileges, restrictions and conditions attaching to the common shares and the preferred shares as a class are as follows: 1. Common Shares 1.1 Dividends. Subject to the prior rights of the holders of the preferred shares, the holders of the common shares shall be entitled to receive dividends declared by the board of directors of the Corporation. 1.2 Dissolution. Subject to the prior rights of the holders of the preferred shares, the holders of the common shares shall be entitled to receive the remaining property of the Corporation in the event of the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among the shareholders for the purpose of winding up its affairs, whether voluntary or involuntary. 1.3 Voting. The holders of the common shares shall be entitled to one vote for each common share held by them at all meetings of shareholders of the Corporation, except meetings at which the holders of the preferred shares are entitled to vote separately as a class or series. 2. Preferred Shares 2.1 One or More Series. The board of directors of the Corporation may issue one or more series of preferred shares at any time and from time to time. Before it issues any series of preferred shares, the board of directors of the Corporation shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series, including without limitation: (a) the issue price per share, which may be expressed in foreign currency, provided that the issue price per share shall not be less than C\$1.00 (or its equivalent in a foreign currency at the date of issue) or more than C\$100.00 (or its equivalent in a foreign currency at the date of issue); (b) the rate, amount or method of calculation of dividends, including whether such rate, amount or method shall be subject to change or adjustment in the future; (c) the method of payment of dividends, including whether such dividends shall be cumulative, non-cumulative, partially cumulative, deferred or payable on some other basis; (d) the date or dates, manner and currency or currencies of payment of dividends; (e) the restrictions, if any, on the payments of dividends on any Junior Shares (defined below); (f) the rights and obligations, if any, of the Corporation to redeem or purchase the shares, including the prices and other terms of redemption or purchase; (g) the terms of any share purchase plan or sinking or similar fund providing for the purchase or redemption of the shares; (h) the rights, if any, of the holders of the shares to retract the shares, including the prices and other terms of retraction; (i) the rights, if any, of the holders of the shares or the Corporation to convert or exchange the shares for other securities of the Corporation or any other entity and the rates and other terms of conversion or exchange; (j) the voting rights, if any, attached to the shares; and (k) the preferences, if any, of the shares over any Junior Shares with respect to the distribution of assets of the Corporation in the event of liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among its shareholders for the purpose of winding up its affairs, whether voluntary or involuntary. "Junior Shares" means the common shares and any other shares of the Corporation ranking junior to the preferred shares with respect to the payment of dividends and with respect to the distribution of assets in the event of the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among its shareholders for the purpose of winding up its affairs, whether voluntary or involuntary. 2.2 Dissolution. In the event of the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among its shareholders for the purpose of winding up its affairs, whether voluntary or involuntary, before any amount shall be paid to, or any property distributed among, the holders of the common shares, the holders of the preferred shares shall be entitled to receive: (a) the amount paid up on such shares or such other amount or amounts as have been provided for with respect to such shares; (b) the premium, if any, provided for with respect to such shares; (c) in the case of shares entitled to cumulative dividends, any unpaid cumulative dividends on such shares; and (d) in the case of shares entitled to non-cumulative dividends, any declared but unpaid noncumulative dividends on such shares. After payment of the amounts payable to them, the holders of the preferred shares shall not be entitled to share in any further distribution of the property and assets of the Corporation. 2.3 Voting. Except where the rights, privileges, restrictions and conditions attaching to a series of preferred shares otherwise provide, the holders of the preferred shares shall not be entitled as such to receive notice of, or to attend or vote at, a meeting of the shareholders of the Corporation. Except where the rights, privileges, restrictions and conditions attaching to a series of preferred shares otherwise provide, on any poll taken at any meeting of the holders of preferred shares, whether as a class or a series or two or more

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Director/Registrar, Ministry of Government and Consumer Services

series, each holder of preferred shares entitled to vote at the meeting shall have one one-hundredth of a vote in respect of each CS\$1.00 (or its equivalent in a foreign currency at the date of issuance) of the issue price for each preferred share held. Except where the rights, privileges, restrictions and conditions attaching to a series of preferred shares otherwise provide, the formalities to be observed with respect to the giving of notice of, and voting at, any meeting of holders of preferred shares, including without limitation, the quorum therefor, shall be those from time to time prescribed by the bylaws of the Corporation or by standing resolutions of the board of directors of the Corporation with respect to meetings of shareholders. 2.4 No Voting Required. Subject to the rights, privileges, restrictions and conditions attaching to a series of preferred shares, the Corporation may, without the approval or consent of the holders of the preferred shares voting separately as a class or series, at any time and from time to time: (a) create one or more other classes of shares ranking on a parity with the preferred shares with respect to the payment of dividends or the distribution of assets in the event of the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among its shareholders for the purpose of winding up its affairs, whether voluntary or involuntary; (b) if all dividends on each outstanding series of preferred shares accrued to the most recently preceding date for the payment of dividends on such series shall have been declared and paid or set apart for payment, create one or more other classes of shares ranking superior to the preferred shares with respect to the payment of dividends or the distribution of assets in the event of the liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of the Corporation among its shareholders for the purpose of winding up its affairs, whether voluntary or involuntary; (c) increase any maximum number of authorized shares of any other class of shares; and (d) effect an exchange, reclassification or cancellation of all or part of the preferred shares. 2.5 No Pre-Emptive Rights. The holders of the preferred shares shall not be entitled as such to subscribe for, purchase or receive any part of any issue of securities of the Corporation, now or hereafter authorized, or any rights to acquire the same, otherwise than in accordance with any conversion, exchange or other rights which may from time to time be attached to any series of preferred shares.

12. The issue, transfer or ownership of shares is/is not restricted and the restrictions (if any) are as follows. If none, enter "None":
None

13. Other provisions

1. Authority to Hold Meetings of Shareholders Outside of Canada Meeting of the shareholders of the Corporation may be held at a place within Canada determined by the directors or, if determined by the directors, outside Canada in New York, New York, United States of America, Los Angeles, California, United States of America, London, England, the Hong Kong Special Administrative Region of The People's Republic of China or Shanghai, The People's Republic of China. 2. Authority to Appoint Additional Directors The board of directors of the Corporation shall fix and may change the number of directors within the minimum and maximum of directors provided for in the Articles of the Corporation. The board of directors may appoint one or more additional directors, who shall hold office for a term expiring not later than the close of the next annual meeting of shareholders, but the total number of directors so appointed may not exceed one-third of the number of directors elected at the previous annual meeting of shareholders.

14. The corporation is to be continued under the Business Corporations Act to the same extent as if it had been incorporated under this Act .

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15. The corporation has complied with subsection 180(3) of the Business Corporations Act.

The articles have been properly executed by the required person(s).

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Supporting Document - Constatng Document from Governing Jurisdiction

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Director/Registrar, Ministry of Government and Consumer Services

Supporting Information - Nuans Report Information

Nuans Report Reference #

121637309

Nuans Report Date

July 04, 2022

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Director/Registrar, Ministry of Government and Consumer Services

CANADIAN SOLAR INC.

THE COMPANY IS AUTHORIZED TO ISSUE MORE THAN ONE CLASS OR SERIES OF SHARES. UPON WRITTEN REQUEST, THE COMPANY WILL FURNISH WITHOUT CHARGE TO EACH SHAREHOLDER WHO SO REQUESTS THE POWERS, DESIGNATIONS, PREFERENCES AND RELATIVE, PARTICIPATING, OPTIONAL OR OTHER SPECIAL RIGHTS OF EACH CLASS OF SHARES OR SERIES THEREOF AND THE QUALIFICATIONS, LIMITATIONS OR RESTRICTIONS OF SUCH PREFERENCES AND/OR RIGHTS.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:	
TEN COM - as tenants in common	UNIF GIFT MIN ACTCustodian (Cust) (Minor)
TEN ENT - as tenants by the entireties	under Uniform Gifts to Minors Act (State)
JT TEN - as joint tenants with right of survivorship and not as tenants in common	UNIF TRF MIN ACTCustodian (until age) (Cust) (Minor) (State)
Additional abbreviations may also be used though not in the above list.	

For value received, _____ hereby sell, assign and transfer unto _____ PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING POSTAL ZIP CODE, OF ASSIGNEE)

_____ Shares
represented by the within Certificate, and do hereby irrevocably constitute and appoint _____ Attorney
to transfer the said stock on the books of the within-named Company with full power of substitution in the premises.

Dated: _____ 20_____

Signature: _____

Signature: _____

Notice: The signature to this assignment must correspond with the name as written upon the face of the certificate, in every particular, without alteration or enlargement, or any change whatever.

Signature(s) Guaranteed: Medallion Guarantee Stamp
THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions) WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM, PURSUANT TO S.E.C. RULE 17Ad-15

SECURITY INSTRUCTIONS

THIS IS WATERMARKED PAPER. DO NOT ACCEPT WITHOUT NOTING WATERMARK. HOLD TO LIGHT TO VERIFY WATERMARK.



The IRS requires that the named transfer agent ("we") report the cost basis of certain shares or units acquired after January 1, 2011. If your shares or units are covered by the legislation, and you requested to sell or transfer the shares or units using a specific cost basis calculation method, then we have processed as you requested. If you did not specify a cost basis calculation method, then we have defaulted to the first in, first out (FIFO) method. Please consult your tax advisor if you need additional information about cost basis.

If you do not keep in contact with the issuer or do not have any activity in your account for the time period specified by state law, your property may become subject to state unclaimed property laws and transferred to the appropriate state.

1534201

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

Canadian Solar Inc. ("we," "us," "our company," or "our") has the following securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934 (the "Exchange Act"):

Title of each class registered as of the end of the period covered by the annual report	Trading symbol	Name of each exchange on which registered
Common shares with no par value	CSIQ	Nasdaq Global Select Market

This exhibit contains a description of the rights of the holders of our common shares. The following summary is subject to and qualified in its entirety by our articles, as amended from time to time, (the "articles"), our by-laws as effective from time to time (the "by-laws"), and by applicable Canadian law, particularly the *Business Corporations Act* (Ontario) (the "OBCA"). This is not a summary of all the significant provisions of the articles, by-laws or of applicable Canadian law and does not purport to be complete. Capitalized terms used but not defined herein have the meanings given to them in our annual report on Form 20-F to which this description of securities registered under section 12 of the Exchange Act is an exhibit.

Item 9. General

Item 9.A.3 Pre-emptive rights

Our common shares do not contain any pre-emptive purchase rights to any of our securities.

Item 9.A.5 Type and class of securities

Our class of common shares are registered with the U.S. Securities and Exchange Commission. We may issue an unlimited number of common shares, without par value. Other than under applicable securities laws, there are no restrictions on the transferability of our common shares.

Item 9.A.6 Limitations or qualifications

Our board of directors has the authority, without approval from the shareholders, to issue an unlimited number of preferred shares, in one or more series, at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series. See Item 9.A.7 below. Due to the issuance of preferred shares, the rights of our common shares, including their voting power, may be materially limited.

Item 9.A.7 Rights of other types of securities

Our board of directors has the authority, without approval from the shareholders, to issue an unlimited number of preferred shares, in one or more series, at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine

the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series.

Item 10.B Articles

Item 10.B.3 Shareholder rights

Dividends

Subject to the prior rights of the holders of the issued preferred shares, if any, the holders of the common shares are entitled to receive dividends declared by our board of directors. Pursuant to the OBCA, the board of directors shall not declare and Canadian Solar Inc. shall not pay a dividend if there are reasonable grounds for believing that (a) Canadian Solar Inc. is, or after the payment, would be unable to pay its liabilities as they become due; or (b) the realizable value of Canadian Solar Inc.'s assets would thereby be less than the aggregate of its liabilities, and its stated capital of all classes. All holders of common shares will share equally on a per share basis in any dividend declared by the board of directors on the common shares. The dividend entitlement time limit will be fixed by the board of directors at the time any such dividend is declared.

Voting rights

The holders of common shares are entitled to receive notice of and to attend and vote at all meetings of our shareholders and each common share confers the right to one vote in person or by proxy at all meetings of our shareholders, except meetings at which the holders of the issued preferred shares, if any, are entitled to vote separately as a class or series. All directors stand for re-election annually.

Liquidation

Subject to the prior rights of the holders of the issued preferred shares, if any, the holders of the common shares are entitled to receive the remaining property of Canadian Solar Inc. in the event of our liquidation, dissolution or winding up, whether voluntary or involuntary, or in the event of any other distribution of the property or assets of Canadian Solar Inc. among the shareholders for the purpose of winding up our affairs, whether voluntary or involuntary.

Other

The common shares are not convertible or redeemable and have no preemptive, subscription or conversion rights. In the event of a merger or consolidation, all common shareholders will be entitled to receive the same per share consideration. There are no provisions in our articles discriminating against any existing or prospective shareholder as a result of such shareholder owning a substantial number of our common shares. Our common shares are not subject to liability to further capital calls by our company. Also, no provisions or rights exist in our articles regarding our common shares in connection with exchange, redemption, retraction, purchase for cancellation, surrender or sinking or purchase funds.

Item 10.B.4 Changes to shareholder rights

Other than as disclosed in Item 9.A.7 above, Canadian Solar Inc.'s articles and by-laws do not provide for us to be able to change the rights of Canadian Solar Inc.'s shareholders.

The OBCA provides for certain avenues for the rights of Canadian Solar Inc.'s shareholders to be changed including:

- The directors may, by resolution, make, amend or repeal any by-laws that regulate our business or affairs, which may change the rights of our shareholders. Where the directors make, amend or repeal a by-law, they are required to submit the by-law, amendment or repeal to the shareholders at the next meeting of shareholders, and the shareholders may, by ordinary resolution, confirm, reject or amend the by-law, amendment or repeal. However the by-law, amendment or repeal is effective from the date of the resolution of the directors until it is confirmed, confirmed as amended or rejected by the shareholders or until the date of the meeting of shareholders at which it should have been submitted if it is not so submitted.
- Subject to the OBCA, we may from time to time if authorized by a special resolution of our shareholders (i.e., a resolution that is submitted to a special meeting of the shareholders duly called for the purpose of considering the resolution and passed, with or without amendment, at the meeting by at least two-thirds of the votes cast), amend Canadian Solar Inc.'s articles to add, change or remove any provision that is permitted by the OBCA to be, or that is, set out in its articles, including without limiting the generality of the foregoing, to:
 - o change our name;
 - o add, change or remove any restriction upon the business or businesses that we may carry on or upon the powers that we may exercise;
 - o add, change or remove any maximum number of shares that we are authorized to issue or any maximum consideration for which any of our shares are authorized to be issued;
 - o create new classes of shares;
 - o change the designation of all or any of its shares, and add, change or remove any rights, privileges, restrictions and conditions, including rights to accrued dividends, in respect of all or any of its shares, whether issued or unissued;
 - o change the shares of any class or series, whether issued or unissued, into a different number of shares of the same class or series or into the same or a different number of shares of other classes or series;
 - o divide a class of shares, whether issued or unissued, into series and fix the number of shares in each series and the rights, privileges, restrictions and conditions thereof;
 - o authorize the directors to divide any class of unissued shares into series and fix the number of shares in each series and the rights, privileges, restrictions and conditions thereof, or to revoke, diminish or enlarge any such authority;
 - o authorize the directors to change the rights, privileges, restrictions and conditions attached to unissued shares of any series, or to revoke, diminish or enlarge any such authority;
 - o subject to certain constraints, increase or decrease the number, or minimum or maximum number, of directors; and
 - o add, change or remove restrictions on the issue, transfer or ownership of shares of any class or series.
- Where the directors are authorized by the articles to divide any class of unissued shares into series and determine the designation, rights, privileges, restrictions and conditions thereof, they may by resolution authorize the amendment of the articles to so provide.

Item 10.B.6 Limitations on shareholder rights

Except as provided below, there are no limitations specific to the rights of non-Canadians to hold or vote our shares under the laws of Canada or Ontario, or in our articles or by-laws.

Competition Act

Limitations on the ability to acquire and hold our shares may be imposed by the *Competition Act* (Canada). This legislation establishes a pre-merger notification regime for certain types of merger transactions that exceed certain statutory shareholding and financial thresholds. Transactions that are subject to notification cannot be closed until the required materials are filed and the applicable statutory waiting period has expired or been waived by the Commissioner of Competition, or the Commissioner. Further, the *Competition Act* (Canada) permits the Commissioner to review any acquisition of control over or of a significant interest in us, whether or not it is subject to mandatory notification. This legislation grants the Commissioner jurisdiction, for up to one year, to challenge this type of acquisition before the Canadian Competition Tribunal if it would, or would be likely to, substantially prevent or lessen competition in any market in Canada.

Investment Canada Act

The *Investment Canada Act* requires notification and, in certain cases, advance review and approval by the Government of Canada, through the Minister of Innovation, Science and Industry (the "**Minister**"), of an investment to establish a new Canadian business by a non-Canadian or of the acquisition by a non-Canadian of "control" of a "Canadian business", all as defined in the *Investment Canada Act*. Generally, the threshold for advance review and approval will be higher in monetary terms for an investor who is controlled in a country that is a member of the World Trade Organization and who is not a state-owned enterprise. The *Investment Canada Act* generally prohibits the implementation of such a reviewable transaction unless, after review, the Minister is satisfied that the investment is likely to be of net benefit to Canada. The *Investment Canada Act* contains various rules to determine if there has been an acquisition of control. For example, for purposes of determining whether an investor has acquired control of a corporation by acquiring shares, the following general rules apply, subject to certain exceptions: (1) the acquisition of a majority of the voting shares of a corporation is deemed to be acquisition of control of that corporation; (2) the acquisition of less than a majority but one-third or more of the voting shares of a corporation is presumed to be an acquisition of control of that corporation unless it can be established that, on the acquisition, the corporation is not controlled in fact by the acquirer through the ownership of voting shares; and (3) the acquisition of less than one-third of the voting shares of a corporation is deemed not to be acquisition of control of that corporation.

In addition, under the *Investment Canada Act*, "national security" review on a discretionary basis may also be undertaken by the federal Canadian government in respect of a much broader range of investments by a non-Canadian to "acquire, in whole or in part, or to establish an entity carrying on all or any part of its operations in Canada", with the relevant test being whether the Minister has "reasonable grounds to believe that an investment by a non-Canadian could be injurious to national security." The Minister has broad discretion to determine whether an investor is a non-Canadian and therefore may be subject to "national security" review. Review on national security grounds is at the discretion of the federal government and may occur on a pre- or post-closing basis. If the Minister, after consultation with the Minister of Public Safety and Emergency Preparedness, considers that the investment could be injurious to "national security", the Minister refers the investment to the Governor in Council. On referral of an investment, if the Governor in Council determines the investment could be injurious to "national security", the Governor in Council may take any measures in respect of the investment that it considers advisable to protect national security, including denying the investment, asking for undertakings, imposing terms or conditions for the investment, or ordering divestiture (if the investment has been completed). Any of these provisions may discourage a potential acquirer from proposing or completing a transaction that may have otherwise presented a premium

to our shareholders. We cannot predict whether investors will find our company and our common shares less attractive because we are governed by foreign laws.

Item 10.B.7 Change in control

The following provisions in Canadian Solar Inc.'s articles may deprive our shareholders of the opportunity to sell their shares at a premium over the prevailing market price by delaying or preventing a change of control of our company:

- Our board of directors has the authority, without approval from the shareholders, to issue an unlimited number of preferred shares, in one or more series, at any time and from time to time. Before it issues any series of preferred shares, our board of directors shall fix the number of preferred shares in, and determine the designation, rights, privileges, restrictions and conditions attaching to the preferred shares of, such series.
- Our board of directors is entitled to fix and may change the number of directors within the minimum and maximum number of directors provided for in our articles (i.e., a minimum of three and a maximum of ten directors). Our board of directors may appoint one or more additional directors, who shall hold office for a term expiring not later than the close of the next annual meeting of shareholders, but the total number of directors so appointed may not exceed one-third of the number of directors elected at the previous annual meeting of shareholders.

In addition, Canadian Solar Inc.'s by-laws and the OBCA provide for minimum time periods for the calling and holding of meetings of shareholders.

Otherwise, there are no provisions in Canadian Solar Inc.'s articles or by-laws or in the OBCA that would have an effect of delaying, deferring or preventing a change in control of our company which would operate with respect to a merger, acquisition or corporate restructuring involving our company or any of our subsidiaries.

Item 10.B.8 Ownership disclosure threshold for our common shares

Canadian Solar Inc.'s articles and by-laws do not have any specific threshold requiring disclosure of ownership by holders of our shares. The OBCA and securities regulation in Canada requires that we disclose in our proxy information circular for our annual general meeting and certain other disclosure documents filed by us under such regulation, holders who beneficially own, directly or indirectly, or control or direct, voting securities of Canadian Solar Inc. carrying 10% or more of the voting rights attached to any class of outstanding voting securities. Most state corporation statutes do not contain provisions governing the threshold above which shareholder ownership must be disclosed. United States federal securities laws require us to disclose, in an annual report on Form 20-F, holders who own 5% or more of Canadian Solar Inc.'s issued and outstanding shares.

Item 10.B.9 Differences in the law

See Items 10.B.3, 10.B.4, 10.B.6, 10.B.7, 10.B.8 above.

Item 10.B.10 Changes in capital

The requirements imposed by our articles governing changes in capital are not more stringent than is required by applicable laws, including the OBCA.

Item 12. Description of securities other than equity securities

Item 12.A Debt securities

Not applicable.

Item 12.B Warrants and rights

Not applicable.

Item 12.C Other securities

Not applicable.

Item 12.D.1 and 12.D.2 Description of American Depositary Shares

Not applicable.

LIST OF SIGNIFICANT SUBSIDIARIES

Name of entity	Place of incorporation	Ownership interest
Canadian Solar Solutions Inc.	Canada	100%
Recurrent Energy Group Inc.	USA	100%
Canadian Solar New Energy Holding Company Limited	Hong Kong	100%
CSI Solar Co., Ltd.	PRC	79.59%
CSI Cells Co., Ltd.	PRC	100%*
Canadian Solar Manufacturing (Luoyang) Inc.	PRC	100%*
Canadian Solar Sunenergy (Baotou) Co., Ltd.	PRC	100%*
CSI Solar Technology (Xining) Co., Ltd.	PRC	100%*
Canadian Solar Manufacturing (Changshu) Inc.	PRC	100%*
Canadian Solar (USA) Inc.	USA	100%*
Canadian Solar International Limited	Hong Kong	100%*
Canadian Solar Manufacturing (Thailand) Co., Ltd.	Thailand	99.999996%*

* Significant subsidiaries (as defined in Rule 1-02(w) of Regulation S-X) within the scope of CSI Solar were held through CSI Solar Co., Ltd. in which CSI held a 79.59% ownership interest. Such ownership interest percentage may differ when calculated on different bases of accounting, e.g. PRC GAAP.

**Certification by the Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Shawn (Xiaohua) Qu, certify that:

1. I have reviewed this annual report on Form 20-F of Canadian Solar Inc. (the "Company");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and
5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 18, 2023

By: /s/ Shawn (Xiaohua) Qu

Name: Shawn (Xiaohua) Qu
Title: Chief Executive Officer

**Certification by the Chief Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002**

I, Huifeng Chang, certify that:

1. I have reviewed this annual report on Form 20-F of Canadian Solar Inc. (the "Company");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and
5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 18, 2023

By: /s/ Huifeng Chang
Name: Huifeng Chang
Title: Chief Financial Officer

**Certification by the Chief Executive Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the Annual Report of Canadian Solar Inc. (the "Company") on Form 20-F for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Shawn (Xiaohua) Qu, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: April 18, 2023

By: /s/ Shawn (Xiaohua) Qu

Name: Shawn (Xiaohua) Qu
Title: Chief Executive Officer

**Certification by the Chief Financial Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**

In connection with the Annual Report of Canadian Solar Inc. (the "Company") on Form 20-F for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Hui Feng Chang, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

Date: April 18, 2023

By: /s/ Hui Feng Chang
Name: Hui Feng Chang
Title: Chief Financial Officer

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-147042, 333-178187 and 333-201766 on Form S-8 and Registration Statement No. 333-208828 on Form F-3 of our reports dated April 18, 2023, relating to the financial statements of Canadian Solar Inc. and subsidiaries (the "Company"), and the effectiveness of the Company's internal control over financial reporting, appearing in this Annual Report on Form 20-F of the Company for the year ended December 31, 2022.

/s/ Deloitte Touche Tohmatsu Certified Public Accountants LLP

Shanghai, China
April 18, 2023

April 18, 2023

VIA EDGAR

Office of Manufacturing
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: Canadian Solar Inc.
Submission under Item 16I(a) of Form 20-F

Dear Sir/Madam,

In compliance with the Holding Foreign Companies Accountable Act (the "HFCAA"), Canadian Solar Inc. (the "Company") is submitting via EDGAR the following information as required under Item 16I(a) of Form 20-F.

On May 26, 2022, the Company was conclusively identified by the U.S. Securities and Exchange Commission (the "SEC") as a Commission-Identified Issuer pursuant to the HFCAA because it filed an annual report on Form 20-F for the fiscal year ended December 31, 2021 with the SEC on April 28, 2022 with an audit report issued by Deloitte Touche Tohmatsu Certified Public Accountants LLP, a registered public accounting firm retained by the Company for the preparation of the audit report on the Company's financial statements included therein. Deloitte Touche Tohmatsu Certified Public Accountants LLP is a registered public accounting firm headquartered in mainland China, a jurisdiction where the Public Company Accounting Oversight Board (the "PCAOB") determined that it was unable to inspect or investigate registered public accounting firms headquartered there until December 2022 when the PCAOB vacated its previous determination. In response to Item 16I(a) of Form 20-F, the Company believes that the following information establishes that it is not owned or controlled by a governmental entity in China.

To the Company's knowledge and based on an examination of our shareholder register and public filings made by our shareholders, including among others, the Schedule 13G/A filed by Invesco Ltd. on January 31, 2022, the Schedule 13G/A filed by BlackRock, Inc. on January 31, 2023, and the Schedule 13G filed by Grantham, Mayo, Van Otterloo & Co. LLC on February 13, 2023, the Company respectfully submits that it is not owned or controlled by a governmental entity in China as of the date of this submission.

As of January 31, 2023, Dr. Shawn (Xiaohua) Qu beneficially owned 21.3% and BlackRock, Inc. beneficially owned 7.3% of the Company's outstanding shares. Based on an examination of the Company's shareholder register and public filings made by the Company's shareholders, no other shareholder owned more than 5% of the Company's outstanding shares as of January 31, 2023.

In addition, the Company is not aware of any governmental entity in China that possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of the Company, whether through the ownership of voting securities, by contract,

or otherwise.

Should you have any questions or comments regarding the Company's submission set forth above, please do not hesitate to contact me, or you may contact our outside legal counsel, David Zhang at david.zhang@kirkland.com or at + 852 3761 3318 (work) or +852 9124 8324 (cell), or Louis Rabinowitz at louis.rabinowitz@kirkland.com or at +852 3761 3593 (work) or +852 6398 4103 (cell), of Kirkland & Ellis. Thank you.

Very truly yours,

By: /s/ Huiheng Chang
Name: Huiheng Chang
Title: Director and Chief Financial Officer

cc: David Zhang, Esq., Kirkland & Ellis
Louis Rabinowitz, Esq., Kirkland & Ellis