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

Form 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2020

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission file number: 001-33156

First Solar, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**20-4623678**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*

350 West Washington Street, Suite 600
Tempe, Arizona 85281
(Address of principal executive offices, including zip code)

(602) 414-9300
(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	FSLR	The NASDAQ Stock Market LLC

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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

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

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

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐
Smaller reporting company	☐	Emerging growth company	☐		

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

Indicate by check mark whether the registrant has filed a report on and attestation on 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 the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant as of June 30, 2020, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $4.1 billion (based on the closing price of the registrant's common stock on that date). As of February 19, 2021, 105,986,398 shares of the registrant's common stock, $0.001 par value per share, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Form 10-K, to the extent not set forth herein, is incorporated by reference from the registrant's definitive proxy statement relating to the Annual Meeting of Shareholders to be held in 2021, which will be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Form 10-K relates.

FIRST SOLAR, INC.

FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2020

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Throughout this Annual Report on Form 10-K, we refer to First Solar, Inc. and its consolidated subsidiaries as "First Solar," "the Company," "we," "us," and "our." When referring to our manufacturing capacity, total sales, and solar module sales, the unit of electricity in watts for megawatts ("MW") and gigawatts ("GW") is direct current ("DC" or "$_{DC}$") unless otherwise noted. When referring to our projects or systems, the unit of electricity in watts for MW and GW is alternating current ("AC" or "$_{AC}$") unless otherwise noted.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Securities Act of 1933, as amended (the "Securities Act"), which are subject to risks, uncertainties, and assumptions that are difficult to predict. All statements in this Annual Report on Form 10-K, other than statements of historical fact, are forward-looking statements. These forward-looking statements are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The forward-looking statements include statements, among other things, concerning: the length and severity of the ongoing COVID-19 (novel coronavirus) outbreak, including its impacts across our businesses on demand, manufacturing, project development, construction, operations and maintenance, financing, and our global supply chains, actions that may be taken by governmental authorities to contain the COVID-19 outbreak or to treat its impacts, and the ability of our customers, suppliers, equipment vendors, and other counterparties to fulfill their contractual obligations to us; effects resulting from certain module manufacturing changes; our business strategy, including anticipated trends and developments in and management plans for our business and the markets in which we operate; future financial results, operating results, revenues, gross margin, operating expenses, products, projected costs (including estimated future module collection and recycling costs), warranties, solar module technology and cost reduction roadmaps, restructuring, product reliability, investments, and capital expenditures; our ability to continue to reduce the cost per watt of our solar modules; the impact of public policies, such as tariffs or other trade remedies imposed on solar cells and modules; effects resulting from pending litigation; our ability to expand manufacturing capacity worldwide; our ability to reduce the costs to develop and construct photovoltaic ("PV") solar power systems; research and development ("R&D") programs and our ability to improve the wattage of our solar modules; sales and marketing initiatives; and competition. In some cases, you can identify these statements by forward-looking words, such as "estimate," "expect," "anticipate," "project," "plan," "intend," "seek," "believe," "forecast," "foresee," "likely," "may," "should," "goal," "target," "might," "will," "could," "predict," "continue," and the negative or plural of these words, and other comparable terminology. Forward-looking statements are only predictions based on our current expectations and our projections about future events. All forward-looking statements included in this Annual Report on Form 10-K are based upon information available to us as of the filing date of this Annual Report on Form 10-K and therefore speak only as of the filing date. You should not place undue reliance on these forward-looking statements. We undertake no obligation to update any of these forward-looking statements for any reason, whether as a result of new information, future developments, or otherwise. These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to differ materially from those expressed or implied by these statements, including, but not limited to:

- structural imbalances in global supply and demand for PV solar modules;
- our competitive position and other key competitive factors;
- the market for renewable energy, including solar energy;
- the reduction, elimination, or expiration of government subsidies, policies, and support programs for solar energy projects;
- our ability to execute on our solar module technology and cost reduction roadmaps;
- our ability to improve the wattage of our solar modules;
- the impact of public policies, such as tariffs or other trade remedies imposed on solar cells and modules;
- the severity and duration of the COVID-19 pandemic, including its potential impact on the Company's business, financial condition, and results of operations;

- interest rate fluctuations and both our and our customers' ability to secure financing;
- our ability to execute on our long-term strategic plans;
- the loss of any of our large customers, or the ability of our customers and counterparties to perform under their contracts with us;
- the creditworthiness of our off-take counterparties and the ability of our off-take counterparties to fulfill their contractual obligations to us;
- the satisfaction of conditions precedent in our sales agreements;
- our ability to attract new customers and to develop and maintain existing customer and supplier relationships;
- claims under our limited warranty obligations;
- the supply and price of components and raw materials, including CdTe;
- our ability to convert existing or construct production facilities to support new product lines;
- future collection and recycling costs for solar modules covered by our module collection and recycling program;
- our ability to protect our intellectual property;
- our continued investment in R&D;
- our ability to successfully develop and complete our systems business projects;
- our ability to attract and retain key executive officers and associates;
- changes in, or the failure to comply with, government regulations and environmental, health, and safety requirements;
- general economic and business conditions, including those influenced by U.S., international, and geopolitical events;
- environmental responsibility, including with respect to cadmium telluride ("CdTe") and other semiconductor materials;
- our ability to prevent and/or minimize the impact of cyber-attacks or other breaches of our information systems;
- effects arising from pending litigation; and
- all other matters discussed in Item 1A. "Risk Factors" and elsewhere in this Annual Report on Form 10-K, our subsequently filed Quarterly Reports on Form 10-Q, and our other filings with the Securities and Exchange Commission (the "SEC").

You should carefully consider the risks and uncertainties described under this section.

PART I

Item 1. *Business*

Company Overview

We are a leading global provider of PV solar energy solutions. We design, manufacture, and sell PV solar modules with an advanced thin film semiconductor technology. In certain markets, we also develop and sell PV solar power systems that primarily use the modules we manufacture and provide operations and maintenance ("O&M") services to system owners. We have substantial, ongoing R&D efforts focused on various technology innovations. We are the world's largest thin film PV solar module manufacturer and the largest PV solar module manufacturer in the Western Hemisphere.

In addressing the overall global demand for electricity, our CdTe modules, which leverage our Series 6™ ("Series 6") module technology, compete favorably on an economic basis with traditional forms of energy generation and provide low cost electricity to end users. Our diverse capabilities facilitate the sale of these solutions and the adoption of our technology in key markets around the world. We believe our strategies and points of differentiation provide the foundation for our competitive position and enable us to remain one of the preferred providers of PV solar modules.

Business Strategy

Differentiated Technology

As a field-proven technology, our CdTe solar modules offer certain advantages over conventional crystalline silicon solar modules by delivering competitive efficiency, higher real-world energy yield, and long-term reliability. Proven to deliver up to 8% more usable energy per nameplate watt than crystalline silicon technologies in certain geographic markets and with a record of reliable system performance, our CdTe technology delivers more energy over the lifetime of a PV solar power system. Our Series 6 module technology, with its combination of high wattage, low manufacturing costs, and balance of systems ("BoS") component compatibility, has further enhanced our competitive position since the launch of such technology in 2018.

In terms of energy yield, in many climates our CdTe solar modules provide an energy production advantage over crystalline silicon solar modules of equivalent efficiency rating. For example, our CdTe solar modules provide a superior temperature coefficient, which results in stronger system performance in typical high insolation climates as the majority of a system's generation, on average, occurs when module temperatures are well above 25°C (standard test conditions). In addition, our CdTe solar modules provide a superior spectral response in humid environments where atmospheric moisture alters the solar spectrum relative to laboratory standards. Our CdTe solar modules also provide a better partial shading response than conventional crystalline silicon solar modules, which may experience significantly lower energy generation than CdTe solar modules when partial shading occurs. As a result of these and other factors, our PV solar modules typically produce more annual energy in real world field conditions than conventional modules with the same nameplate capacity. Furthermore, our thin-film CdTe semiconductor technology is immune to cell cracking and its resulting power output loss, a common failure often observed in crystalline silicon modules caused by poor manufacturing, handling, weather, or other conditions.

Manufacturing Process

Our modules are manufactured in a high-throughput, automated environment that integrates all manufacturing steps into a continuous flow line. Such manufacturing process eliminates the multiple supply chain operators and resource-intensive batch processing steps that are used to produce crystalline silicon solar modules, which typically occur over several days and across multiple factories. At the outset of the production of our modules, a sheet of glass enters the production line and in a matter of hours is transformed into a completed module, which is flash tested,

packaged, and ready for shipment. With more than 30 GW_{DC} of modules sold worldwide, we have a demonstrated history of manufacturing success and innovation. We have a global manufacturing footprint with facilities based in the United States, Malaysia, and Vietnam.

Diversified Capabilities

We are diversified across the solar value chain. Many of the efficiencies and capabilities that we deliver to our customers are not easily replicable for other industry participants that are not diversified in a similar manner. Accordingly, our operational model offers PV solar energy solutions that benefit from our wide range of capabilities, including advanced PV solar module manufacturing and, in certain markets, project development, construction management services, and O&M services.

Financial Viability

We are committed to creating long-term shareholder value through a decision-making framework that delivers a balance of growth, profitability, and liquidity. This framework has enabled us to fund our Series 6 manufacturing and capacity expansion initiatives using cash flows generated by our operations despite substantial downward pressure on the price of solar modules and systems due to competition, demand fluctuations, and significant overcapacity in the industry. Our financial viability provides strategic optionality as we evaluate how to invest in our business and generate returns for our shareholders. Our financial viability and bankability also enable us to offer meaningful warranties, which provide us with a competitive advantage relative to many of our peers in the solar industry in the context of project financing and offering PV solar energy solutions to long-term owners. Furthermore, we expect our financial discipline and ability to manage operating costs to enhance our profitability as we continue to scale our business.

Sustainability

In addition to our financial commitments, we are also committed to minimizing the environmental impacts and enhancing the social and economic benefits of our products across their life cycle, from raw material sourcing through end-of-life module recycling. Our thin film modules are manufactured in a high-throughput, automated environment that integrates all manufacturing steps into a continuous-flow operation, using less energy, water, and semiconductor material than conventional crystalline silicon. Accordingly, our modules and systems provide an ecologically leading solution to climate change, energy security, and water scarcity, which also enables our customers to achieve their sustainability objectives. On a lifecycle basis, our thin film module technology has the fastest energy payback time, smallest carbon footprint, and lowest water use of any PV solar technology on the market.

The energy payback time, which is the amount of time a system must operate to recover the energy required to produce it, of our module technology is facilitated by our specialized manufacturing process. In less than six months under high irradiance conditions, our systems produce more energy than was required to create them. This energy payback time represents a 50-fold energy return on investment over a theoretical 25-year system lifetime and an abundant net energy gain to the electricity grid. Furthermore, our module technology displaces up to 98% of greenhouse gas emissions and other air pollutants when replacing traditional forms of energy generation. Our modules also use up to 400 times less water per MW hour than conventional energy sources and up to 24 times less water than other PV solar modules. In addition, our industry-leading recycling process further enhances our sustainability advantage by recovering approximately 90% of the glass for reuse in new glass products and over 90% of the semiconductor material for reuse in new modules. During 2020 our Series 6 modules became the world's first PV product to be included in the Electronic Products Environmental Assessment Tool ("EPEAT") Registry's Photovoltaic and Inverters product category. The EPEAT Registry enables the identification of credible sustainable electronic products from a broad range of manufacturers based on several factors, including the product's raw materials, manufacturing energy, water use, product packaging, end-of-life recycling, and corporate responsibility.

Offerings and Capabilities

We are focusing on markets and energy applications in which solar power can be a least-cost, best-fit energy solution, particularly in regions with high solar resources, significant current or projected electricity demand, and/or relatively high existing electricity prices. We differentiate our product offerings by geographic market and localize the solution, as needed. Our consultative approach to our customers' solar energy needs and capabilities results in customized solutions to meet their economic goals. As a result, we have designed our product and service offerings according to the following business areas:

- *PV Solar Modules*. Our modules couple our leading-edge CdTe technology with the manufacturing excellence and quality control that comes from being one of the world's most experienced producers of advanced PV solar modules. Our technology demonstrates certain performance advantages over crystalline silicon solar modules of equivalent efficiency rating by delivering higher real-world energy yield and long-term reliability. We are able to provide such product performance, quality, and reliability to our customers due, in large part, to our consistent and sustained investments in R&D activities.

- *Power Plant Solutions*. In certain markets, we develop and sell PV solar power systems that primarily use the modules we manufacture and provide O&M services to optimize system performance and comply with project agreements and regulations. Our grid-connected systems support a diversified energy portfolio, reduce fossil-fuel consumption, mitigate the risk of fuel price volatility, and save costs, proving that centralized solar generation can deliver dependable and affordable solar electricity to the grid around the world. Additional benefits of our grid-connected power systems include reductions of fuel imports and improvements in energy security, faster time-to-power, and managed variability through accurate forecasting. Our products and services are engineered to enable the maximization of energy output and revenue for our customers while significantly reducing their unplanned maintenance costs.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with a subsidiary of Clairvest Group, Inc. ("Clairvest") for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our U.S. project development business, we have determined it is in the best interest of our stockholders to pursue the sale of this business. On January 24, 2021, we entered into an agreement with a subsidiary of the Ontario Municipal Employees Retirement System ("OMERS") for the sale of our U.S. project development operations, which comprises the business of developing, contracting for the construction of, and selling utility-scale PV solar power systems. The transaction includes our approximately 10 GW_{AC} utility-scale solar project pipeline, including the advanced-stage Horizon, Madison, Ridgely, Rabbitbrush, and Oak Trail projects that are expected to commence construction in the next two years; the 30 MW_{AC} Barilla Solar project, which is operational; and certain other equipment. In addition, OMERS has agreed to certain module purchase commitments. The completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from the U.S. Federal Energy Regulatory Commission ("FERC"), the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by the Committee on Foreign Investment in the United States ("CFIUS"), and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Market Overview

Solar energy is one of the fastest growing forms of renewable energy with numerous economic and environmental benefits that make it an attractive complement to and/or substitute for traditional forms of energy generation. In recent years, the price of PV solar power systems, and accordingly the cost of producing electricity from such systems, has dropped to levels that are competitive with or below the wholesale price of electricity in many markets. This rapid price decline has opened new possibilities to develop systems in many locations with limited or no financial incentives. Other technological developments in the industry, such as the advancement of energy storage capabilities, have further enhanced the prospects of solar energy as an alternative to traditional forms of energy generation. Furthermore, the fact that a PV solar power system requires no fuel provides a unique and valuable hedging benefit to owners of such systems relative to traditional energy generation assets. Once installed, PV solar power systems can function for over 35 years with relatively less maintenance or oversight compared to many other forms of generation. In addition to these economic benefits, solar energy has substantial environmental benefits. For example, PV solar power systems generate no greenhouse gas or other emissions and use minimal amounts of water compared to traditional energy generation assets. Worldwide solar markets continue to develop, aided by the above factors as well as demand elasticity resulting from declining industry average selling prices, both at the module and system level, which have made solar power one of the most economically attractive sources of energy.

Module average selling prices in many global markets have declined in recent years and are expected to continue to decline to some degree in the future. In the aggregate, we believe manufacturers of solar cells and modules have significant installed production capacity, relative to global demand, and the ability for additional capacity expansion. We believe the solar industry may from time to time experience periods of structural imbalance between supply and demand (i.e., where production capacity exceeds global demand), and that such periods will continue to put pressure on pricing. Additionally, intense competition at the system level may result in an environment in which pricing falls rapidly, thereby further increasing demand for solar energy solutions but constraining the ability for project developers and diversified module manufacturers to sustain meaningful and consistent profitability. In light of such market realities, we are focusing on our strategies and points of differentiation, which include our advanced module technology, our manufacturing process, our diversified capabilities, our financial viability, and the sustainability advantage of our modules and systems.

Global Markets

We have established and continue to develop a global business presence. Energy markets are, by their nature, localized, with different drivers and market forces impacting electricity generation and demand in a particular region or for a particular application. Accordingly, our business is evolving worldwide and is shaped by the varying ways in which our offerings can be compelling and economically viable solutions to energy needs in various markets. Due to the COVID-19 pandemic, market growth in certain geographies in which we operate has slowed. For a detailed discussion of the impact of, and potential risks arising from, the COVID-19 pandemic on our business, see Item 1A. “Risk Factors – The COVID-19 pandemic could materially impact our business, financial condition, and results of operations.”

We are currently focusing on markets, including those listed below, in which our CdTe solar modules provide certain advantages over conventional crystalline silicon solar modules, including high insolation climates in which our modules provide a superior temperature coefficient, humid environments in which our modules provide a superior spectral response, and markets that favor the superior sustainability profile of our PV solar technology. To the extent our production capacity expands in future periods, we have the potential to extend our focus to additional geographic markets.

United States. Multiple markets within the United States, which accounted for 68% of our 2020 net sales, exemplify favorable characteristics for a solar market, including (i) sizeable electricity demand, particularly around growing population centers and industrial areas; (ii) strong demand for renewable energy generation; and (iii) abundant solar resources. In those areas and applications in which these factors are more pronounced, our PV solar energy solutions

compete favorably on an economic basis with traditional forms of energy generation. The market penetration of PV solar is also impacted by certain federal and state support programs, including the federal investment tax credit, as described below under "Support Programs."

Japan. Japan's electricity markets have various characteristics, which make them attractive markets for PV solar energy. In particular, Japan has few domestic fossil fuel resources and relies heavily on fossil fuel imports. Following the Fukushima earthquake in 2011, the country introduced certain initiatives to limit its reliance on nuclear power. Accordingly, the Japanese government announced a long-term goal of dramatically increasing installed solar power capacity and provided various incentives for solar power installations. In recent years, we have partnered with local companies to develop, construct, sell, and operate various PV solar power systems, which are expected to mitigate Japan's dependence on fossil fuel imports and nuclear power. In 2020, we completed the sale of multiple projects in Japan totaling 116 MW_{AC} and expect to continue providing O&M services to such projects in the future. We continue to pursue other utility-scale project development, O&M, and module sale opportunities in the country.

Europe. Most markets across Europe reflect strong demand for PV solar energy due to its ability to compete economically with more traditional forms of energy generation. In particular, France, Germany, Greece, Italy, the Netherlands, Portugal, and Spain are all running tenders in which utility-scale PV solar projects can bid for capacity. Such tenders and other recent market developments indicate the potential for further growth in the demand for PV solar energy beyond the region's installed generation capacity of approximately 135 GW_{DC}. Due to the COVID-19 pandemic, the market growth in Europe has slowed, and the utility-scale market has experienced some delays in both tenders and installations. We continue to pursue module sales activities in many of the countries mentioned above.

India. India continues to represent one of the largest and fastest growing markets for PV solar energy with an installed generation capacity of over 36 GW_{DC} and over 20 GW_{DC} of new procurement programs announced. In addition, the government has established aggressive renewable energy targets, which include increasing the country's solar capacity to 100 GW_{AC} by 2022, and the overall renewable energy target of 450 GW_{DC} of installed capacity by 2030. These targets, along with various policy and regulatory measures, help create significant and sustained demand for PV solar energy. Accordingly, we expect to continue selling modules to market participants to address the region's energy needs. In 2020, we completed the sale of our Anantapur and Tungabhadra projects located in Telangana and Karnataka, respectively, which total 40 MW_{AC}. In addition, we continue to maintain our strong module presence in India with approximately 2 GW_{DC} of installed modules.

Support Programs

Although we compete in many markets that do not require solar-specific government subsidies or support programs, our net sales and profits remain subject, in the near term, to variability based on the availability and size of government subsidies and economic incentives, such as quotas, renewable portfolio standards, and tendering systems. In addition to these support programs, financial incentives for PV solar energy generation may include tax and production incentives. Additionally, to address the near-term business disruption caused by the COVID-19 pandemic, many governments have proposed policies or support programs intended to stimulate their respective economies. Such support programs may include additional incentives for renewable energy projects, including PV solar power systems, over several years. Although we expect to become less impacted by and less dependent on these forms of government support over time, such programs continue to influence the demand for PV solar energy around the world.

In Europe, renewable energy targets, in conjunction with tenders for utility-scale PV solar and other support measures, have contributed to growth in PV solar markets. Renewable energy targets prescribe how much energy consumption must come from renewable sources, while incentive policies and competitive tender policies are intended to support new supply development by providing certainty to investors. Various European Union

("EU") directives on renewable energy have set targets for all EU member states in support of the recently revised goal of a 55% share of energy from renewable sources in the EU by 2030.

Tax incentive programs exist in the United States at both the federal and state level and can take the form of investment and production tax credits, accelerated depreciation, and sales and property tax exemptions and abatements. At the federal level, investment tax credits for business and residential solar systems have gone through several cycles of enactment and expiration since the 1980s. In 2015, the U.S. Congress extended the 30% federal energy investment tax credit ("ITC") for both residential and commercial solar installations through 2019. Among other requirements, such credits require projects to have commenced construction by a certain date, which may be achieved by certain qualifying procurement activities. Accordingly, projects that commenced construction in 2019 were eligible for the 30% ITC. The ITC stepped down to 26% for projects that commenced construction in 2020. In December 2020, the U.S. Congress extended the 26% ITC through 2022 as part of its COVID-19 relief efforts. As a result of this extension, the ITC will step down to 22% for projects that commence construction in 2023 and 10% for projects that commence construction thereafter. The ITC has been an important economic driver of solar installations and qualifying procurement activities in the United States, and its extension has contributed to greater medium-term demand. The positive impact of the ITC depends to a large degree on the availability of tax equity for project financing, and any significant reduction in the availability of tax equity in the future could make it more difficult to develop and construct projects requiring financing.

The majority of states in the United States have also enacted legislation adopting Renewable Portfolio Standard ("RPS") mechanisms. Under an RPS, regulated utilities and other load serving entities are required to procure a specified percentage of their total retail electricity sales to end-user customers from eligible renewable resources, such as solar energy generation facilities, by a specified date. Some programs may further require that a specified portion of the total percentage of renewable energy must come from solar generation facilities or other technologies. RPS mechanisms and other legislation vary significantly from state to state, particularly with respect to the percentage of renewable energy required to achieve the state's RPS, the definition of eligible renewable energy resources, and the extent to which renewable energy credits qualify for RPS compliance.

Measured in terms of the volume of renewable electricity required to meet its RPS mandate, California's RPS program is one of the most significant in the United States. In addition to serving as a template for other states, the California market for renewable energy has historically been a key region for First Solar and has led the western United States in renewable energy demand for the past several years. First enacted in 2002, California's RPS statute has been amended several times to increase the overall percentage requirement as well as to accelerate the target date for program compliance. Pursuant to the passage of SB100 by the California legislature in 2018, the California RPS program requires utilities and other obligated load serving entities to procure 60% of their total retail electricity demand from eligible renewable resources by 2030 and 100% of such electricity demand from carbon-free resources by 2045.

Various proposed and contemplated environmental and tax policies may create regulatory uncertainty in the renewable energy sector, including the solar energy sector, and may lead to a reduction or removal of various clean energy programs and initiatives designed to curtail climate change. For more information about the risks associated with these potential government actions, see Item 1A. "Risk Factors – The reduction, elimination, or expiration of government subsidies, economic incentives, tax incentives, renewable energy targets, and other support for on-grid solar electricity applications, or other public policies, such as tariffs or other trade remedies imposed on solar cells and modules, could negatively impact demand and/or price levels for our solar modules and systems and limit our growth or lead to a reduction in our net sales or increase our costs, thereby adversely impacting our operating results."

Business Segments

We operate our business in two segments. Our modules segment involves the design, manufacture, and sale of CdTe solar modules, which convert sunlight into electricity. Third-party customers of our modules segment include integrators and operators of PV solar power systems. Our second segment is our systems segment, through which we provide power plant solutions in certain markets, which include (i) project development, (ii) engineering, procurement, and construction ("EPC") services, and (iii) O&M services. We may provide any combination of individual products and services within such capabilities (including, with respect to EPC services, by contracting with third parties) depending upon the customer and market opportunity. Our systems segment customers include utilities, independent power producers, commercial and industrial companies, and other system owners. As part of our systems segment, we may also temporarily own and operate certain of our systems for a period of time based on strategic opportunities or market factors. See Note 20. "Segment and Geographical Information" to our consolidated financial statements for further information regarding our business segments.

Modules Business

Solar Modules

Since the inception of First Solar, our flagship module has used our advanced thin film semiconductor technology. In April 2018, we commenced commercial production of our Series 6 module technology, which represents the latest generation of our flagship module. Each Series 6 module is a glass laminate approximately 4ft x 6ft (123cm x 201cm) in size that encapsulates thin film semiconductor materials. At the end of 2020, our Series 6 modules had an average power output of 439 watts. Our modules offer up to 8% more energy than certain crystalline silicon solar modules of equivalent nameplate capacity and generally include anti-reflective coated glass, which enhances energy production. Our module semiconductor structure is a single-junction polycrystalline thin film that uses CdTe as the absorption layer. CdTe has absorption properties that are well matched to the solar spectrum and can deliver competitive wattage using approximately 1-2% of the amount of semiconductor material used to manufacture conventional crystalline silicon modules. Due to its minimal thickness, our thin-film CdTe semiconductor technology is also immune to cell cracking and its resulting power output loss, a common failure often observed in crystalline silicon modules caused by poor manufacturing, handling, weather, or other conditions.

Manufacturing Process

We manufacture our solar modules on integrated production lines in an automated, proprietary, and continuous process, which includes the following three stages: (i) the deposition stage, (ii) the cell definition and treatment stage, and (iii) the assembly and test stage. In the deposition stage, panels of transparent oxide-coated glass are robotically loaded onto the production line where they are cleaned, laser-mark identified with a serial number, heated, and coated with thin layers of CdTe and other semiconductor materials using our proprietary vapor transport deposition technology, after which the semiconductor-coated plates are cooled rapidly to increase glass strength. In the cell definition and treatment stage, we use high-speed lasers to transform the large continuous semiconductor coating on the glass plate into a series of interconnected cells that deliver the desired current and voltage output. In this stage, we also treat the semiconductor film using proprietary chemistries and processes to improve the device's performance, and we apply a metal sputtered back contact. In the assembly and test stage, we apply busbars, inter-layer material, and a rear glass cover sheet that is laminated to encapsulate the device. We then apply anti-reflective coating material to the substrate glass to further improve the module's performance by increasing its ability to absorb sunlight. Finally, junction boxes, termination wires, and an under-mount frame are applied to complete the assembly.

We maintain a robust quality and reliability assurance program that monitors critical process parameters and measures product performance to ensure that industry and more stringent internal standards are met. We also conduct acceptance testing for electrical leakage, visual quality, and power measurement on a solar simulator prior to preparing a module for shipment. The quality and reliability tests complement production surveillance with an

ongoing monitoring program, subjecting production modules to accelerated life stress testing to help ensure ongoing conformance to requirements of the International Electrotechnical Commission and Underwriters Laboratories Inc. These programs help assure delivery of power and performance in the field with a high level of product quality and reliability.

Research and Development

Our R&D model differentiates us from much of our competition due to its vertical integration, from advanced research to product development, manufacturing, and applications. We continue to devote substantial resources to our R&D efforts, which generally focus on continually improving the wattage and energy yield of our solar modules. We also focus our R&D activities on continuously improving module durability and manufacturing efficiencies, including throughput improvement, volume ramp, and material cost reduction. Based on publicly available information, we are one of the leaders in R&D investment among PV solar module manufacturers, maintaining a rate of innovation that enables rapid wattage gains and cost reductions.

In the course of our R&D activities, we explore various technologies in our efforts to sustain competitive differentiation in our modules. We primarily conduct our R&D activities and qualify process and product improvements for full production at our Perrysburg, Ohio plant and then use a systematic process to propagate them to our other production lines. We believe that our systematic approach to technology change management provides continuous improvements and ensures uniform adoption across our production lines. In addition, our production lines are replicas or near replicas of each other and, as a result, a process or production improvement on one line can be rapidly and reliably deployed to other production lines.

We regularly produce research cells in our laboratories, some of which are tested for performance and certified by independent labs, such as the National Renewable Energy Laboratory. Cell efficiency measures the proportion of light converted to electricity in a single solar cell at standard test conditions. Our research cells are produced using laboratory equipment and methods and are not intended to be representative of our manufacturing capability. Our module conversion efficiency has improved on average more than half a percent every year for the last ten years. We currently hold two world records for CdTe PV cell efficiency, achieving an independently certified research cell efficiency of 22.1% and an aperture area module efficiency of 19.0%. We believe that our record cells demonstrate a potential long-term module efficiency entitlement of over 25% that is achievable using our commercial-scale manufacturing equipment.

Customers

During 2020, we sold the majority of our solar modules (not included in our systems projects) to integrators and operators of systems in the United States and France, and such third-party module sales represented approximately 64% of our total net sales. During 2020, Longroad Energy, NextEra Energy, and Softbank each accounted for more than 10% of our modules business net sales.

We continue to focus on key geographic markets, particularly in areas with abundant solar resources and sizable electricity demand, and additional customer relationships to diversify our customer base. We also collaborate with providers of community solar solutions, which address the residential and small business sectors to provide a broad range of customers with access to competitively priced solar energy regardless of the suitability of their rooftops. Community solar utilizes relatively small ground-mounted installations that provide clean energy to utilities, which then offer consumers the ability to buy into a specific community installation and benefit from the solar power generated by that resource. The demand for such offerings continues to build as states across the country are enacting community solar policies, and utilities are looking to diversify their energy generation portfolio in order to meet customer demand for affordable, clean energy. We also collaborate with providers of Community Choice Aggregation programs, which allow cities and counties to purchase power on behalf of residents and businesses to provide clean energy options at competitive prices. Our expertise in module technology and utility-scale generation,

paired with community solar and/or Community Choice Aggregation, allows residential power consumers to “go solar,” including those who live in apartment buildings or whose home rooftops cannot accommodate solar panels.

The wholesale commercial and industrial market also represents a promising opportunity for the widespread adoption of PV solar technology as corporations undertake certain sustainability commitments. The demand for corporate renewables continues to accelerate, with corporations worldwide committing to the RE100 campaign, a collaborative, global initiative of influential businesses committed to 100% renewable electricity. We believe we also have a competitive advantage in the commercial and industrial market due to many customers’ sensitivity to the sustainability, experience, bankability, and financial viability of their suppliers and geographically diverse operating locations. With our sustainability advantage, strong development expertise, financial strength, and global footprint, we are well positioned to meet these needs.

Competition

The solar energy and renewable energy sectors are highly competitive and continually evolving as participants in these sectors strive to distinguish themselves within their markets and compete within the larger electric power industry. We face intense competition for sales of solar modules, which has resulted in and may continue to result in reduced average selling prices and loss of market share. With respect to our modules business, our primary sources of competition are crystalline silicon solar module manufacturers. In addition, we expect to compete with future entrants into the PV solar industry and existing market participants that offer new or differentiated technological solutions. For example, many crystalline silicon cell and wafer manufacturers have transitioned from lower efficiency Back Surface Field (“BSF”) multi-crystalline cells (the legacy technology against which we have generally competed) to higher efficiency Passivated Emitter Rear Contact (“PERC”) mono-crystalline cells at competitive cost structures. Additionally, while conventional solar modules, including the solar modules we produce, are monofacial, meaning their ability to produce energy is a function of direct and diffuse irradiance on their front side, certain manufacturers of mono-crystalline PERC modules offer bifacial modules that also capture diffuse irradiance on the back side of a module. Within the larger electric power industry, we compete with companies that currently offer or are developing other renewable energy technologies (including wind, hydroelectric, geothermal, biomass, and tidal technologies), as well as traditional energy generation sources.

Certain of our existing or future competitors may have direct or indirect access to sovereign capital, which could enable such competitors to operate at minimal or negative operating margins for sustained periods of time. Among PV solar module manufacturers, the principal methods of competition include sales price per watt, wattage (through a larger form factor or an improved conversion efficiency), energy yield, reliability, warranty terms, and customer payment terms. Our results of operations could be adversely affected if competitors reduce module pricing to levels below their costs, bid aggressively low prices for module sale agreements, or are able to operate at minimal or negative operating margins for sustained periods of time. We believe the solar industry may from time to time experience periods of structural imbalance between supply and demand (i.e., where production capacity exceeds global demand), and that such periods will also put pressure on pricing, which could adversely affect our results of operations. For additional information, see Item 1A. “Risk Factors – Competition in solar markets globally and across the solar value chain is intense, and could remain that way for an extended period of time. An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition, and results of operations.”

Raw Materials

Our CdTe module manufacturing process uses approximately 30 types of raw materials and components to construct a solar module. One critical raw material in our production process is CdTe. Other raw materials and components that are critical to our manufacturing process include front glass coated with transparent conductive oxide, other semiconductor materials, organics such as photo resist, tempered back glass, frames, packaging components such as interlayer, cord plate/cord plate cap, lead wire, and solar connectors. Before we use these materials and components

in our manufacturing process, a supplier must undergo rigorous qualification procedures, and we continually evaluate new suppliers as part of our cost reduction roadmaps. When possible, we attempt to use suppliers that can provide a raw material supply source that is near our manufacturing locations, reducing the cost and lead times for such materials. Several of our key raw materials and components are either single-sourced or sourced from a limited number of suppliers.

Solar Module Collection and Recycling

We are committed to extended producer responsibility and take into account the environmental impact of our products over their entire life cycle. As part of such efforts, we previously established the solar industry's first global comprehensive module collection and recycling program. Our module recycling process is designed to maximize the recovery of materials, including the glass and encapsulated semiconductor material, for use in new modules or other products and enhances the sustainability profile of our modules. Approximately 90% of each collected First Solar module can be recycled into materials for reuse. For certain legacy customer sales contracts that were covered under this program, which has since been discontinued, we agreed to pay the costs for the collection and recycling of qualifying solar modules, and the end users agreed to notify us, disassemble their solar power systems, package the solar modules for shipment, and revert ownership rights over the modules back to us at the end of the modules' service lives. We currently have recycling facilities operating at each of our manufacturing facilities in the United States, Malaysia, and Vietnam and at our former manufacturing facility location in Germany.

The EU's Waste Electrical and Electronic Equipment ("WEEE") Directive places the obligation of recycling (including collection, treatment, and environmentally sound disposal) of electrical and electronic equipment products upon producers and is applicable to all PV solar modules in EU member states. For modules covered under our program that were previously sold into and installed in the EU, we continue to maintain a commitment to cover the estimated collection and recycling costs consistent with our historical program. Additionally, as a result of the transposition of the WEEE Directive by the EU member states, we have adjusted our recycling offerings, as required, in various EU member states to ensure compliance with specific EU member state WEEE regulations.

Solar Module Warranties

We provide a limited PV solar module warranty covering defects in materials and workmanship under normal use and service conditions for up to 12 years. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 98% of their labeled power output rating during the first year, with the warranty coverage reducing by a degradation factor every year thereafter throughout the limited power output warranty period of up to 30 years. Among other things, our solar module warranty also covers the resulting power output loss from cell cracking. For additional information on our solar module warranty programs, refer to Item 1A. "Risk Factors – Problems with product quality or performance may cause us to incur significant and/or unexpected contractual damages and/or warranty and related expenses, damage our market reputation, and prevent us from maintaining or increasing our market share."

Systems Business

Project Development

Project development activities generally include (i) selecting, securing, and maintaining the project site; (ii) obtaining the requisite interconnection and transmission studies; (iii) executing an interconnection agreement; (iv) obtaining environmental and land-use permits; and (v) entering into a power purchase agreement ("PPA") with an off-taker for the power to be generated by the project. The sequence of such development activities varies by international location and, in certain locations, may begin by initially bidding for PPA or off-take agreements. These activities culminate in receiving the right to construct and operate a PV solar power system.

Depending on the market opportunity or geographic location, we may acquire projects in various stages of development or acquire project companies from developers in order to complete the development process, construct a system incorporating our modules, and sell the system to a long-term owner. We may also collaborate with local partners in connection with these project development activities. Depending on the type of project or geographic location, PPAs or feed-in-tariff ("FiT") structures define the price and terms the utility or customer will pay for power produced from the project. Depending primarily on the location, stage of development upon our acquisition of the project, and/or other site attributes, the development cycle typically ranges from one to two years but may be as long as five years. We may be required to incur significant costs for preliminary engineering, permitting, legal, and other expenses before we can determine whether a project is feasible, economically attractive, or capable of being built. If there is a delay in obtaining any required regulatory approvals, we may be forced to incur additional costs or impair our project assets, and the termination rights of the off-taker under the PPA may be triggered.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our U.S. project development business, we have determined it is in the best interest of our stockholders to pursue the sale of this business. On January 24, 2021, we entered into an agreement with OMERS for the sale of our U.S. project development operations, which comprises the business of developing, contracting for the construction of, and selling utility-scale PV solar power systems. The transaction includes our approximately 10 GW_{AC} utility-scale solar project pipeline, including the advanced-stage Horizon, Madison, Ridgely, Rabbitbrush, and Oak Trail projects that are expected to commence construction in the next two years; the 30 MW_{AC} Barilla Solar project, which is operational; and certain other equipment. In addition, OMERS has agreed to certain module purchase commitments. The completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from FERC, the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by CFIUS, and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

EPC Services

EPC services generally include (i) engineering design and related services, (ii) BoS procurement, and (iii) construction contracting and management. In 2019, we transitioned from an internal EPC service model in the United States to an external model, in which we leverage the capabilities of third-party EPC services in providing power plant solutions to our systems segment customers. The shift to an external EPC service model in the United States aligns with our typical model in international markets and is facilitated, in part, by our Series 6 module technology and its improved BoS compatibility. For systems we constructed, we typically provided limited warranties for defects in engineering design, installation, and BoS part workmanship for a period of one to two years following the substantial completion of a system or a block within the system. For certain systems we constructed, we have also provided an energy performance test during the first or second year of a system's operation to demonstrate that the actual energy generation for the applicable year meets or exceeds the modeled energy expectation, after certain adjustments, such as irradiance, weather, module degradation, soiling, curtailment, and other conditions that may affect a system's energy output but are unrelated to quality, design, or construction.

O&M Services

Our typical O&M service arrangements involve the performance of standard activities associated with operating and maintaining a PV solar power system. We perform such activities pursuant to the scope of services outlined in the underlying contract. These activities are considered necessary to optimize system performance and comply with PPAs, other agreements, and regulations. Although the scope of our services varies by contract and jurisdiction, our O&M service arrangements generally include 24/7 system monitoring, compliance with various project agreements and/or regulatory agencies, energy forecasting, performance engineering analysis, regular performance reporting, turn-key maintenance services including spare parts and corrective maintenance repair, warranty management, and environmental services. As part of our O&M services, we also typically provide an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a

specific period after adjusting for factors outside our control as the service provider, such as weather, curtailment, outages, force majeure, and other conditions that may affect system availability.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Customers

Our systems customers consist of utilities, independent power producers, commercial and industrial companies, and other system owners, such as investors who are looking for long-term investment vehicles that are expected to generate consistent returns. Such customers may purchase completed systems, which include our PV solar modules, or any combination of development, EPC, and/or O&M services. We also seek to provide innovative power plant solutions to facilitate the adoption and optimize the use of our technology. During 2020, the substantial majority of our systems business sales were in the United States and Japan, and the principal customers of our systems business were Goldman Sachs Renewable Power, SMFL Mirai Partners, and Mitsui & Co., who each accounted for more than 10% of our systems business net sales.

Competition

With respect to our systems business, we face competition from other providers of renewable energy solutions, including developers of PV solar power systems and developers of other forms of renewable energy projects, such as wind, hydroelectric, geothermal, biomass, and tidal projects. We may also compete with other developers that integrate energy storage solutions with PV solar or wind projects, thereby enabling system owners to better align the delivery of energy with periods of peak demand. To the extent other solar module manufacturers become more vertically integrated, we expect to face increased competition from such companies as well. Certain current or potential future competitors may have a low cost of capital and/or access to sovereign capital. The decline in module prices over the last several years has increased interest in solar energy worldwide, and there are limited barriers to entry in certain parts of the PV solar value chain, depending on the geographic market. Accordingly, competition at the system level can be intense, thereby exerting downward pressure on system-level selling prices industry-wide. See Item 1A. “Risk Factors – Competition at the system level can be intense, thereby potentially exerting downward pressure on system-level profit margins industry-wide, which could reduce our profitability and adversely affect our results of operations.”

Own and Operate

From time to time, we may temporarily own and operate, or retain interests in, certain of our systems for a period of time based on strategic opportunities or market factors. The ability to do so provides certain potential benefits, including greater control over the sales process and offering a lower risk profile to project buyers. As of December 31, 2020, we owned and operated a number of systems in various geographic markets, including Chile, India, the United States, and the Asia-Pacific region. For more information about the economics of such ownership and the impacts on our liquidity see Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources.”

Intellectual Property

Our success depends, in part, on our ability to maintain and protect our proprietary technology and to conduct our business without infringing on the proprietary rights of others. We rely primarily on a combination of patents, trademarks, and trade secrets, as well as associate and third-party confidentiality agreements, to safeguard our intellectual property. We regularly file patent applications to protect inventions arising from our R&D activities and are currently pursuing patent applications in the United States and other countries. Our patent applications and any future patent applications may not result in a patent being issued with the scope of the claims we seek, or at all, and any patents we may receive may be challenged, invalidated, or declared unenforceable. In addition, we have registered and/or have applied to register trademarks and service marks in the United States and a number of foreign countries for "First Solar."

With respect to proprietary know-how that is not patentable and processes for which patents are difficult to enforce, we rely on, among other things, trade secret protection and confidentiality agreements to safeguard our interests. We believe that many elements of our PV solar module manufacturing processes, including our unique materials sourcing, involve proprietary know-how, technology, or data that are not covered by patents or patent applications, including technical processes, equipment designs, algorithms, and procedures. We have taken security measures to protect these elements. Our R&D personnel have entered into confidentiality and proprietary information agreements with us. These agreements address intellectual property protection issues and require our associates to assign to us all of the inventions, designs, and technologies they develop during the course of their employment with us. We also require our customers and business partners to enter into confidentiality agreements before we disclose sensitive aspects of our modules, technology, or business plans. We have not been subject to any material intellectual property infringement or misappropriation claims.

Regulatory, Environmental, Health, and Safety Matters

We are subject to various federal, state, local, and international laws and regulations relating to modules, systems, and services, and are often subject to oversight and regulation in accordance with national and local ordinances relating to building codes, safety, environmental protection, land acquisition, utility interconnection and metering, and other matters. Our systems business is also subject to regulatory oversight and liability if we fail to operate our PV solar power systems in compliance with electric reliability rules. The impact of these laws and requirements may increase our overall costs and may delay, prevent, or increase the cost of manufacturing PV modules or the construction and operation of the systems we intend to build. As we operate in the U.S. and internationally, we are also subject to the application of U.S. trade laws and trade laws of other countries. Such tariffs and policies, or any other U.S. or global trade remedies or other trade barriers that apply to us given our global operations, may directly or indirectly affect our business, financial condition, and results of operations. See Item 1A. "Risk Factors – Existing regulations and policies, changes thereto, and new regulations and policies may present technical, regulatory, and economic barriers to the purchase and use of PV solar products or systems, which may significantly reduce demand for our modules, systems, or services."

We are also subject to the application of various anti-bribery laws, some of which prohibit improper payments to government and non-government persons and entities, and others (e.g., the U.S. Foreign Corrupt Practices Act (the "FCPA") and the U.K. Bribery Act) that extend their application to activities outside their country of origin. We compete against companies for contracts in China, India, South America, and the Middle East, which require substantial government contact and where norms can differ from U.S. standards, and not all competitors are subject to compliance with the same anti-bribery laws. See Item 1A. Risk Factors – "We could be adversely affected by any violations of the FCPA, the U.K. Bribery Act, and other foreign anti-bribery laws."

We are also subject to various federal, state, local, and international laws and regulations relating to the protection of the environment, including those governing the discharge of pollutants into the air and water; the use, management, and disposal of hazardous materials and wastes; occupational health and safety; and the cleanup of contaminated sites. Our operations include the use, handling, storage, transportation, generation, and disposal of hazardous

materials and wastes. Therefore, we could incur substantial costs, including cleanup costs, fines, and civil or criminal sanctions and costs arising from third-party property damage or personal injury claims as a result of violations of, or liabilities under, environmental and occupational health and safety laws and regulations or non-compliance with environmental permits required for our operations. We believe we are currently in substantial compliance with applicable environmental and occupational health and safety requirements and do not expect to incur material expenditures for environmental and occupational health and safety controls in the foreseeable future. However, future developments such as the implementation of new, more stringent laws and regulations, more aggressive enforcement policies, or the discovery of unknown environmental conditions may require expenditures that could have a material adverse effect on our business, financial condition, or results of operations. See Item 1A. “Risk Factors – Environmental obligations and liabilities could have a substantial negative impact on our business, financial condition, and results of operations.”

Corporate History

We were incorporated in Delaware in February 2006 and completed our initial public offering of common stock in November 2006.

Human Capital

As of December 31, 2020, we had approximately 5,100 associates (our term for full and part-time employees), including approximately 4,000 in our modules business and approximately 400 associates that work directly in our systems business. The majority of these associates work in the United States, Malaysia, and Vietnam. The remainder of our associates are in R&D, sales and marketing, and general and administrative positions. As of December 31, 2020, we had approximately 300 associates that support our North American O&M operations and U.S. project development, collectively. These associates will depart the Company in conjunction with the timing of sale agreements described above in “Business Strategy.”

In response to the COVID-19 pandemic, we implemented safety protocols and new procedures to protect our associates and our customers. In line with guidance from the World Health Organization, local health authorities and other governmental authorities, we have implemented numerous preventative hygiene and safety measures at our global manufacturing, administrative, and other sites and facilities. The vast majority of our associates who are capable of performing their function remotely are telecommuting (i.e., working from home).

None of our associates are currently represented by labor unions or covered by a collective bargaining agreement. As we continue to expand domestically and internationally, we may encounter either regional laws that mandate union representation or associates who desire union representation or a collective bargaining agreement. We recognize that in the locations where we operate, employees have the right to freely associate or not associate with third-party labor organizations, along with the right to bargain or not to bargain collectively in accordance with local laws.

Available Information

We maintain a website at www.firstsolar.com. We make available free of charge on our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC. The information contained in or connected to our website is not incorporated by reference into this report. We use our website as one means of disclosing material non-public information and for complying with our disclosure obligations under the SEC's Regulation FD. Such disclosures are typically included within the Investor Relations section of our website at investor.firstsolar.com. Accordingly, investors should monitor such portions of our website in addition to following our press releases, SEC filings, and public conference calls and webcasts. The SEC also maintains a website at www.sec.gov that contains reports and other information regarding issuers, such as First Solar, that file electronically with the SEC.

Information about Our Executive Officers

Our executive officers and their ages and positions as of February 25, 2021 were as follows:

Name	Age	Position
Mark R. Widmar	55	Chief Executive Officer
Alexander R. Bradley	39	Chief Financial Officer
Georges Antoun	58	Chief Commercial Officer
Philip Tymen deJong	61	Chief Operations Officer
Michael Koralewski	49	Chief Manufacturing Operations Officer
Kuntal Kumar Verma	48	Chief Manufacturing Engineering Officer
Patrick Buehler	43	Chief Quality and Reliability Officer
Markus Gloeckler	47	Chief Technology Officer
Jason Dymbort	43	General Counsel and Secretary
Caroline Stockdale	57	Chief People and Communications Officer

Mark R. Widmar was appointed Chief Executive Officer in July 2016. He joined First Solar in April 2011 as Chief Financial Officer and also served as First Solar's Chief Accounting Officer from February 2012 through June 2015. From March 2015 to June 2016, Mr. Widmar served as the Chief Financial Officer and through June 2018, served as a director on the board of the general partner of 8point3 Energy Partners LP ("8point3"), the joint yieldco formed by First Solar and SunPower Corporation in 2015 to own and operate a portfolio of selected solar generation assets. Prior to joining First Solar, Mr. Widmar served as Chief Financial Officer of GrafTech International Ltd., a leading global manufacturer of advanced carbon and graphite materials, from May 2006 through March 2011. Prior to joining GrafTech, Mr. Widmar served as Corporate Controller of NCR Inc. from 2005 to 2006, and was a Business Unit Chief Financial Officer for NCR from November 2002 to his appointment as Controller. He also served as a Division Controller at Dell, Inc. from August 2000 to November 2002. Mr. Widmar also held various financial and managerial positions with Lucent Technologies Inc., Allied Signal, Inc., and Bristol Myers/Squibb, Inc. He began his career in 1987 as an accountant with Ernst & Young. Mr. Widmar holds a Bachelor of Science in business accounting and a Masters of Business Administration from Indiana University.

Alexander R. Bradley was appointed Chief Financial Officer in October 2016. He joined First Solar in May 2008, and previously served as Vice President of both Treasury and Project Finance, leading or supporting the structuring, sale, and financing of over $10 billion and approximately 2.7 GW_{DC} of the Company's worldwide development assets, including several of the largest PV power plant projects in North America. From June 2016 to June 2018, Mr. Bradley also served as an officer and board member of the general partner of 8point3. Prior to joining First Solar, Mr. Bradley worked at HSBC in investment banking and leveraged finance, in London and New York, covering the energy and utilities sector. He received his Master of Arts from the University of Edinburgh, Scotland.

Georges Antoun was appointed Chief Commercial Officer in July 2016. He joined First Solar in July 2012 as Chief Operating Officer before being appointed as President, U.S. in July 2015. Mr. Antoun has over 30 years of operational and technical experience, including leadership positions at several global technology companies. Prior to joining First Solar, Mr. Antoun served as Venture Partner at Technology Crossover Ventures ("TCV"), a private equity and venture firm that he joined in July 2011. Before joining TCV, Mr. Antoun was the Head of Product Area IP & Broadband Networks for Ericsson, based in San Jose, California. Mr. Antoun joined Ericsson in 2007, when Ericsson acquired Redback Networks, a telecommunications equipment company, where Mr. Antoun served as the Senior Vice President of World Wide Sales & Operations. After the acquisition, Mr. Antoun was promoted to Chief Executive Officer of the Redback Networks subsidiary. Prior to Redback Networks, Mr. Antoun spent five years at Cisco Systems, where he served as Vice President of Worldwide Systems Engineering and Field Marketing, Vice President of Worldwide Optical Operations, and Vice President of Carrier Sales. Prior to Cisco Systems, he was the Director of Systems Engineering at Newbridge Networks, a data and voice networking company. Mr. Antoun started his career at Nynex (now Verizon Communications), where he was part of its Science and Technology Division. Mr. Antoun also served as a member of the board of directors of Ruckus Wireless, Inc. and Violin Memory, Inc., both publicly-traded companies. He earned a Bachelor of Science degree in engineering from the University of Louisiana at Lafayette and a Master's degree in information systems engineering from NYU Poly.

Philip Tymen deJong was appointed Chief Operating Officer in July 2015. Mr. deJong plans to retire as Chief Operating Officer, effective April 2021, and currently has responsibility for overseeing priority projects for the Company. Mr. deJong is transitioning responsibility for manufacturing, EPC services, O&M services, quality and reliability, supply chain, and information technology to Michael Koralewski, Chief Manufacturing Operations Officer; Kuntal Kumar Verma, Chief Manufacturing Engineering Officer; and Patrick Buehler, Chief Quality and Reliability Officer. Mr. deJong joined First Solar in January 2010 as Vice President, Plant Management and served in several Senior Vice President roles in manufacturing and operations prior to being appointed Senior Vice President, Manufacturing & EPC in January 2015. Prior to joining First Solar, Mr. deJong was Vice President of Assembly/Test Manufacturing for Numonyx Corporation. Prior to that, he worked for 25 years at Intel Corporation, holding various positions in engineering, manufacturing, wafer fabrication management, and assembly/test manufacturing. Mr. deJong holds a Bachelor of Science degree in industrial engineering/mechanical engineering from Oregon State University and has completed advanced study at the University of New Mexico Anderson School of Management.

Michael Koralewski was appointed Chief Manufacturing Operations Officer in July 2020. Mr. Koralewski provides nearly 25 years of global operational experience to the executive leadership team. Mr. Koralewski joined First Solar in 2006, serving in several senior roles in operations and quality management, including Senior Vice President, Global Manufacturing since 2015; Vice President, Global Site Operations and Plant Manager since 2011; and Vice President, Global Quality since 2009. In all of these roles Mr. Koralewski has been significantly involved since the beginning of First Solar's manufacturing scaling and expansion from site selection through sustaining operations. Prior to joining First Solar, Mr. Koralewski worked at Dana Incorporated where he held several positions with global responsibility in operations and quality management. He earned a Bachelor of Science in chemical engineering from Case Western Reserve University and a Master of Business Administration from Bowling Green State University.

Kuntal Kumar Verma was appointed Chief Manufacturing Engineering Officer in July 2020. Mr. Verma joined First Solar in 2002, serving in progressively more senior roles in engineering and manufacturing, including Vice President, Global Manufacturing Engineering since 2012. He is responsible for the global manufacturing performance and improvement roadmap, including global technology transfer, new plant start-ups and strategic initiatives. Prior to joining First Solar, Mr. Verma held several engineering and operations positions at Reliance Industries Limited, India. He is a Master Black Belt in Six Sigma/Lean Manufacturing with an expert certification in Taguchi Methods (Robust Engineering) and a Certification in Production and Inventory Management from American Production and Inventory Control Society. He earned a Bachelor of Science in mechanical engineering from the National Institute of Technology in India, a Master of Science in industrial engineering from the University of Toledo, and a Master of Business Administration from Bowling Green State University.

Patrick Buehler was appointed Chief Quality and Reliability Officer in July 2020. Mr. Buehler joined First Solar in 2006, serving in progressively more senior technical and operations roles in quality and reliability, including Vice President, Quality and Reliability since 2019. Prior to joining First Solar, Mr. Buehler held several roles in manufacturing, engineering, maintenance, and product development at DuPont de Nemours, Inc. and Cummins, Inc. He earned a Bachelor of Science in mechanical engineering from the University of Cincinnati and a Master of Science in mechanical engineering from Purdue University.

Markus Gloeckler was appointed Chief Technology Officer in November 2020 after being appointed Co-Chief Technology Officer in July 2020. He is focused on driving First Solar's Series 6 thin film PV module platform. Mr. Gloeckler has extensive experience guiding strategic research and development activities and has served First Solar as Vice President and Chief Scientist, before being promoted to Senior Vice President, Module Research and Development. He was instrumental in enabling First Solar's achievement of various world records relating to conversion efficiency for CdTe solar cells. In his role as Vice President of Research, he led the thin film technology transfer from General Electric to First Solar following the intellectual property acquisition in 2013. He joined First Solar in 2005 in an engineering function supporting First Solar's technology development after the initial launch of the Series 2 module. Mr. Gloeckler holds an undergraduate degree in microsystems engineering from the Regensburg University of Applied Sciences in Germany, and a Doctor of Philosophy in physics from Colorado State University.

Jason Dymbort joined First Solar in March 2008, serving in a broad range of legal roles before being appointed General Counsel and Secretary in July 2020. Between 2015 and 2018, Mr. Dymbort served as General Counsel and Secretary for the general partner of 8point3 Energy Partners, then a publicly-traded yieldco and affiliate of First Solar. Before joining First Solar, Mr. Dymbort was a corporate attorney at Cravath, Swaine & Moore LLP. He holds a Juris Doctor degree from the University of Pennsylvania Law School, where he was a member of the Penn Law Review, and a bachelor's degree from Brandeis University.

Caroline Stockdale joined First Solar in October 2019 as Executive Vice President, Human Resources and Communications and was appointed Chief People and Communications Officer in October 2020. Prior to joining First Solar, she served as the Chief Executive Officer for First Perform, a provider of human resources services for a variety of customers, from Fortune 100 companies to cyber start-ups. Previously, she served as Chief Human Resources Officer for Medtronic from 2010 to 2013 and Warner Music Group from 2005 to 2009. Before joining Warner Music Group, she served as the senior human resources leader in global divisions of American Express from 2002 to 2005 and General Electric from 1997 to 2002. Ms. Stockdale is a member of the Forbes Human Resources Council. Ms. Stockdale holds a Bachelor of Arts in political theories and institutions, and philosophy, from the University of Sheffield, England.

Item 1A. ***Risk Factors***

An investment in our stock involves a high degree of risk. You should carefully consider the following information, together with the other information in this Annual Report on Form 10-K, before buying shares of our stock. If any of the following risks or uncertainties occur, our business, financial condition, and results of operations could be materially and adversely affected and the trading price of our stock could decline.

Summary of Risk Factors

The following is a summary of the principal risks and uncertainties that could materially adversely affect our business, financial condition, and results of operations and make an investment in our stock speculative or risky. You should read this summary together with the more detailed description of each risk factor contained below.

Risks Related to Our Markets and Customers

- Competition in solar markets globally and across the solar value chain is intense, and could remain that way for an extended period of time. An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand. If our competitors reduce module pricing to levels near or below their manufacturing costs, or are able to operate at minimal or negative operating margins for sustained periods of time, or if demand for PV modules does not grow sufficiently to justify the current production supply, our business, financial condition, and results of operations could be adversely affected.

- PV solar and related technologies may not be suitable for continued adoption at economically attractive rates of return. Sufficient additional demand for solar modules, related technologies, and systems may not develop or may take longer to develop than we anticipate, causing our net sales and profit to flatten or decline and threatening our ability to sustain profitability.

- The reduction, elimination, or expiration of government subsidies, economic incentives, tax incentives, renewable energy targets, and other support for on-grid solar electricity applications, or other public policies could negatively impact demand and/or price levels for our solar modules and systems. The imposition of tariffs on our products could materially increase our costs to perform under our contracts with customers, which could adversely affect our results of operations.

- An increase in interest rates or tightening of the supply of capital in the global financial markets (including a reduction in total tax equity availability) could make it difficult for customers to finance the cost of a PV solar power system and could reduce the demand for our modules or systems and/or lead to a reduction in the average selling price for such offerings.

Risks Related to Our Operations, Manufacturing, and Technology

- We face intense competition from manufacturers of crystalline silicon solar modules; if global supply exceeds global demand, it could lead to a further reduction in the average selling price for PV solar modules, which could reduce our net sales and adversely affect our results of operations.

- Problems with product quality or performance may cause us to incur significant and/or unexpected contractual damages and/or warranty and related expenses, damage our market reputation, and prevent us from maintaining or increasing our market share.

- Our failure to further refine our technology, reduce module manufacturing and BoS costs, and develop and introduce improved PV products could render our solar modules or systems uncompetitive and reduce our net sales, profitability, and/or market share.

- Several of our key raw materials components, particularly CdTe, and manufacturing equipment are either single-sourced or sourced from a limited number of suppliers, and their failure to perform could cause manufacturing delays and impair our ability to deliver solar modules to customers in the required quality and quantities and at a price that is profitable to us.

Risks Related to Our Systems Business

- Project development or construction activities may not be successful; projects under development may not receive required permits, real property rights, PPAs, interconnection, and transmission arrangements; or financing or construction may not commence or proceed as scheduled, which could increase our costs and impair our ability to recover our investments.

- We may be unable to acquire or lease land, obtain necessary interconnection and transmission rights, and/or obtain the approvals, licenses, permits, and electric transmission grid interconnection and transmission rights necessary to build and operate PV solar power systems in a timely and cost effective manner, and regulatory agencies, local communities, labor unions, tribes, or other third parties may delay, prevent, or increase the cost of construction and operation of the system we intend to build.

- We may not be able to obtain long-term contracts for the sale of power produced by our projects at prices and on other terms favorable to attract financing and other investments, adversely affecting our results of operations.

- Lack of transmission capacity availability, potential upgrade costs to the transmission grid, and other system constraints could significantly impact our ability to build PV solar power systems and generate solar electricity power sales.

Risks Related to Regulations

- Existing regulations and policies, changes thereto, and new regulations and policies may present technical, regulatory, and economic barriers to the purchase and use of PV solar products or systems, which may significantly reduce demand for our modules, systems, or services.

Risks Related to the COVID-19 Pandemic

- The extent to which the COVID-19 pandemic could impact us is highly uncertain and will depend largely on the severity and duration of the pandemic, measures taken to contain the spread of the virus, and policies implemented by governmental authorities to ease restrictions in a phased manner.

General Risk Factors

- If our long-lived assets or project related assets become impaired, we may be required to record significant charges to earnings.

- Our credit agreements contain covenant restrictions that may limit our ability to operate our business.

Risks Related to Our Markets and Customers

Competition in solar markets globally and across the solar value chain is intense, and could remain that way for an extended period of time. An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition, and results of operations.

In the aggregate, we believe manufacturers of solar cells and modules have significant installed production capacity, relative to global demand, and the ability for additional capacity expansion. For example, we estimate that in 2020 approximately 50 GW_{DC} of capacity was added by solar module manufacturers, primarily but not exclusively in Asia. We believe the solar industry may from time to time experience periods of structural imbalance between supply and demand (i.e., where production capacity exceeds global demand), and that such periods will continue to put pressure on pricing. During the past several years, industry average selling prices per watt have declined in many markets, at times significantly, both at the module and system levels, as competitors have reduced prices to sell inventories worldwide. There may be additional pressure on global demand and average selling prices in the future resulting from fluctuating demand in certain major solar markets, such as China. If our competitors reduce module pricing to levels near or below their manufacturing costs, or are able to operate at minimal or negative operating margins for sustained periods of time, or if demand for PV modules does not grow sufficiently to justify the current production supply, our business, financial condition, and results of operations could be adversely affected.

If PV solar and related technologies are not suitable for continued adoption at economically attractive rates of return or if sufficient additional demand for solar modules, related technologies, and systems does not develop or takes longer to develop than we anticipate, our net sales and profit may flatten or decline and we may be unable to sustain profitability.

In comparison to traditional forms of energy generation, the solar energy market continues to be at a relatively early stage of development. If utility-scale PV solar technology proves unsuitable for continued adoption at economically attractive rates of return or if additional demand for solar modules and systems fails to develop sufficiently or takes longer to develop than we anticipate, we may be unable to grow our business or generate sufficient net sales to sustain profitability. In addition, demand for solar modules, related technologies, and systems in our targeted markets may develop to a lesser extent than we anticipate. Many factors may affect the viability of continued adoption of utility-scale PV solar technology in our targeted markets, as well as the demand for solar modules and systems generally, including the following:

- cost-effectiveness of the electricity generated by PV solar power systems compared to conventional energy sources, such as natural gas (which fuel source may be subject to significant price fluctuations from time to time), and other renewable energy sources, such as wind, geothermal, and hydroelectric;

- changes in tax, trade remedies, and other public policy, as well as changes in economic, market, and other conditions that affect the price of, and demand for, conventional energy resources, non-solar renewable energy resources (e.g., wind and hydroelectric), and energy efficiency programs and products, including increases or decreases in the prices of natural gas, coal, oil, and other fossil fuels and in the prices of competing renewable resources;

- the extent of competition, barriers to entry, and overall conditions and timing related to the development of solar in new and emerging market segments such as commercial and industrial customers, community solar, community choice aggregators, and other customer segments;

- availability, substance, and magnitude of support programs including federal, state, and local government subsidies, incentives, targets, and renewable portfolio standards, among other policies and programs, to accelerate the development of the solar industry;

- performance, reliability, and availability of energy generated by PV solar power systems compared to conventional and other non-solar renewable energy sources and products, particularly conventional energy generation capable of providing 24-hour, non-intermittent baseload power;

- the development, functionality, scale, cost, and timing of energy storage solutions; and

- changes in the amount and priorities of capital expenditures by end users of solar modules and systems (e.g., utilities), which capital expenditures tend to decrease when the economy slows or when interest rates increase, thereby resulting in redirection away from solar generation to development of competing forms of electric generation and to distribution (e.g., smart grid), transmission, and energy efficiency measures.

The reduction, elimination, or expiration of government subsidies, economic incentives, tax incentives, renewable energy targets, and other support for on-grid solar electricity applications, or other public policies, such as tariffs or other trade remedies imposed on solar cells and modules, could negatively impact demand and/or price levels for our solar modules and systems and limit our growth or lead to a reduction in our net sales or increase our costs, thereby adversely impacting our operating results.

Although we believe that solar energy will experience widespread adoption in those applications where it competes economically with traditional forms of energy without any support programs, in certain markets our net sales and profits remain subject to variability based on the availability and size of government subsidies and economic incentives. Federal, state, and local governmental bodies in many countries have provided subsidies in the form of FiTs, rebates, tax incentives, and other incentives to end users, distributors, system integrators, and manufacturers of PV solar products. Many of these support programs expire, phase out over time, require renewal by the applicable authority, or may be amended. A summary of certain recent developments in the major government support programs that may impact our business appears under Item 1. “Business – Support Programs.” To the extent these support programs are reduced earlier than previously expected or are changed retroactively, such changes could negatively impact demand and/or price levels for our solar modules and systems, lead to a reduction in our net sales, and adversely impact our operating results. Another consideration in the U.S. market, and to a lesser extent in other global markets, is the effect of governmental land-use planning policies and environmental policies on utility-scale PV solar development. The adoption of restrictive land-use designations or environmental regulations that proscribe or restrict the siting of utility-scale solar facilities could adversely affect the marginal cost of such development.

Changes or threatened changes in U.S. regulatory policy may subject us to significant risks, including the following:

- a reduction or removal of clean energy programs and initiatives and the incentives they provide may diminish the market for future solar energy off-take agreements, slow the retirement of aging fossil fuel plants, including the retirements of coal generation plants, and reduce the ability for solar project developers to compete for off-take agreements, which may reduce PV solar module sales;

- any limitations on the value or availability to potential investors of tax incentives that benefit solar energy projects such as the ITC and accelerated depreciation deductions could result in reducing such investors’ economic returns, causing a reduction in the availability of affordable financing, thereby reducing demand for PV solar modules; and

- any effort to overturn federal and state laws, regulations, or policies that are supportive of solar energy generation or that remove costs or other limitations on other types of electricity generation that compete with solar energy projects could negatively impact our ability to compete with traditional forms of electricity generation and materially and adversely affect our business.

Application of U.S. trade laws, or trade laws of other countries, may also impact, either directly or indirectly, our operating results. In some instances, the application of trade laws is currently beneficial to the Company, and changes in their application could have an adverse impact.

For example, the United States currently imposes different types of tariffs and/or other trade remedies on certain imported crystalline silicon photovoltaic modules and cells from various countries. These tariffs include a global safeguard measure imposed pursuant to Section 201 of the Trade Act of 1974 that provides for tariffs on imported crystalline silicon solar modules and a tariff-rate quota on imported crystalline silicon solar cells. Between February 2021 and February 2022, the tariff rate is 18% for imported crystalline silicon photovoltaic modules and imported crystalline silicon solar cells above the tariff rate quota. Thin film solar cell products, such as our CdTe technology, are specifically excluded from the tariffs. The positive impact of this measure on our operating results was reduced by a tariff exclusion for imports of bifacial modules that the U.S. Trade Representative granted in June 2019 and that the U.S. President withdrew in October 2020. Further changes to the measure, including as a result of pending litigation challenging the withdrawal of the exclusion, could further impact our operating results. In addition, the United States currently imposes antidumping and countervailing duties on certain imported crystalline silicon photovoltaic cells and modules from China and Taiwan. Such antidumping and countervailing duties can change over time pursuant to annual reviews conducted by the U.S. Department of Commerce, and a decline in duty rates could have an adverse impact on our operating results.

In other instances, the application of U.S. trade laws has had, or could have, an adverse impact on our operating results by increasing our costs or limiting the competitiveness of our products. Examples include tariffs the United States imposes on certain imported aluminum and steel articles, generally at rates of 10% and 25%, respectively, under Section 232 of the Trade Expansion Act of 1962; and potential tariffs on imports of goods from Vietnam under Section 301 of the Tariff Act of 1974. If such tariffs are imposed on solar modules imported from Vietnam, it could negatively affect our business, financial condition, and results of operations.

Internationally, in July 2018, the Indian government imposed a safeguard measure on solar cells and modules imported from various countries, including member countries of the Organisation for Economic Co-operation and Development ("OECD"), China, and Malaysia, for a two-year period, starting at 25% through July 2019 and declining by five percentage points in each subsequent six-month period. In July 2020, the Indian government announced an extension to the safeguard duty regime at a revised rate of 14.9% through December 2020 and declining to 14.5% through July 2021. These duties are applicable to imports from member countries of the OECD, China, Vietnam, and Thailand, but imports from Malaysia have been exempted from the revised safeguard measures.

Such tariffs and policies, or any other U.S. or global trade remedies or other trade barriers, may directly or indirectly affect U.S. or global markets for solar energy and our business, financial condition, and results of operations. These examples show that established markets for PV solar development face uncertainties arising from policy, regulatory, and governmental constraints. While the expected potential of the markets we are targeting is significant, policy promulgation and market development are especially vulnerable to governmental inertia, political instability, the imposition or lowering of trade remedies and other trade barriers, geopolitical risk, fossil fuel subsidization, potentially stringent localization requirements, and limited available infrastructure.

An increase in interest rates or tightening of the supply of capital in the global financial markets (including a reduction in total tax equity availability) could make it difficult for customers to finance the cost of a PV solar power system and could reduce the demand for our modules or systems and/or lead to a reduction in the average selling price for such offerings.

Many of our customers and our systems business depend on debt and/or equity financing to fund the initial capital expenditure required to develop, build, and/or purchase a PV solar power system. As a result, an increase in interest rates, or a reduction in the supply of project debt financing or tax equity investments, could reduce the number of solar projects that receive financing or otherwise make it difficult for our customers or our systems business to secure the financing necessary to develop, build, purchase, or install a PV solar power system on favorable terms, or at all, and thus lower demand for our solar modules, which could limit our growth or reduce our net sales. See the Risk Factor entitled "The reduction, elimination, or expiration of government subsidies, economic incentives, tax incentives, renewable energy targets, and other support for on-grid solar electricity applications, or other public

policies, such as tariffs or other trade remedies imposed on solar cells and modules, could negatively impact demand and/or price levels for our solar modules and systems and limit our growth or lead to a reduction in our net sales or increase our costs, thereby adversely impacting our operating results" for additional information. In addition, we believe that a significant percentage of our customers install systems as an investment, funding the initial capital expenditure through a combination of equity and debt. An increase in interest rates could lower an investor's return on investment in a system, increase equity return requirements, or make alternative investments more attractive relative to PV solar power systems and, in each case, could cause these customers to seek alternative investments.

We may be unable to fully execute on our long-term strategic plans, which could have a material adverse effect on our business, financial condition, or results of operations.

We face numerous difficulties in executing on our long-term strategic plans, particularly in new foreign jurisdictions, including the following:

- difficulty in competing against companies who may have greater financial resources and/or a more effective or established localized business presence and/or an ability to operate with minimal or negative operating margins for sustained periods of time;
- difficulty in competing successfully with other technologies, such as bifacial modules and n-type mono-crystalline wafers and cells;
- difficulty in accurately prioritizing geographic markets that we can most effectively and profitably serve with our PV solar offerings, including miscalculations in overestimating or underestimating addressable market demand;
- adverse public policies in countries we operate in and/or are pursuing, including local content requirements, the imposition of trade remedies, or capital investment requirements;
- business climates, such as that in China, that may have the effect of putting foreign companies at a disadvantage relative to domestic companies;
- unstable economic, social, and/or operating environments in foreign jurisdictions, including social unrest, currency, inflation, and interest rate uncertainties;
- the possibility of applying an ineffective commercial approach to targeted markets, including product offerings that may not meet market needs;
- difficulty in generating sufficient sales volumes at economically sustainable profitability levels;
- difficulty in timely identifying, attracting, training, and retaining qualified sales, technical, and other personnel in geographies targeted for expansion;
- difficulty in maintaining proper controls and procedures as we expand our business operations in terms of geographical reach, including transitioning certain business functions to low-cost geographies, with any material control failure potentially leading to reputational damage and loss of confidence in our financial reporting;
- difficulty in competing successfully for market share in overall solar markets as a result of the success of companies participating in the global rooftop PV solar market, which is a segment in which we do not have significant historical experience;

- difficulty in establishing and implementing a commercial and operational approach adequate to address the specific needs of the markets we are pursuing;
- difficulty in identifying effective local partners and developing any necessary partnerships with local businesses on commercially acceptable terms;
- difficulty in balancing market demand and manufacturing production in an efficient and timely manner, potentially causing our manufacturing capacity to be constrained in some future periods or over-supplied in others; and
- difficulty in obtaining the necessary regulatory approvals to consummate the sale of our U.S. project development business.

Refer also to the Risk Factors entitled "Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in the United States and/or foreign countries," and "The reduction, elimination, or expiration of government subsidies, economic incentives, tax incentives, renewable energy targets, and other support for on-grid solar electricity applications, or other public policies, such as tariffs or other trade remedies imposed on solar cells and modules, could negatively impact demand and/or price levels for our solar modules and systems and limit our growth or lead to a reduction in our net sales or increase our costs, thereby adversely impacting our operating results."

The loss of any of our large customers, or the inability of our customers and counterparties to perform under their contracts with us, could significantly reduce our net sales and negatively impact our results of operations.

Our customers include integrators and operators of systems, utilities, independent power producers, commercial and industrial companies, and other system owners, who may experience intense competition at the system level, thereby constraining the ability for such customers to sustain meaningful and consistent profitability. The loss of any of our large customers, their inability to perform under their contracts, or their default in payment could significantly reduce our net sales and/or adversely impact our operating results. While our contracts with customers typically have certain firm purchase commitments and may include provisions for the payment of amounts to us in certain events of contract termination, these contracts may be subject to amendments made by us or requested by our customers. These amendments may reduce the volume of modules to be sold under the contract, adjust delivery schedules, or otherwise decrease the expected revenue under these contracts. Although we believe that we can mitigate this risk, in part, by reallocating modules to other customers if the need arises, we may be unable, in whole or in part, to do so on similar terms or at all. We may also mitigate this risk by requiring some form of payment security from our customers, such as parent guarantees, bank guarantees, surety bonds, or commercial letters of credit. However, in the event the providers of such payment security fail to perform their obligations, our operating results could be adversely impacted.

We may be unable to profitably provide new solar offerings or achieve sufficient market penetration with such offerings.

We may expand our portfolio of offerings to include solutions that build upon our core competencies but for which we have not had significant historical experience, including variations in our traditional product offerings or other offerings related to commercial and industrial customers and community solar. We cannot be certain that we will be able to ascertain and allocate the appropriate financial and human resources necessary to grow these business areas. We could invest capital into growing these businesses but fail to address market or customer needs or otherwise not experience a satisfactory level of financial return. Also, in expanding into these areas, we may be competing against companies that previously have not been significant competitors, such as companies that currently have substantially more experience than we do in the residential, commercial and industrial, or other targeted offerings. If we are

unable to achieve growth in these areas, our overall growth and financial performance may be limited relative to our competitors and our operating results could be adversely impacted.

Risks Related to Our Operations, Manufacturing, and Technology

We face intense competition from manufacturers of crystalline silicon solar modules; if global supply exceeds global demand, it could lead to a further reduction in the average selling price for PV solar modules, which could reduce our net sales and adversely affect our results of operations.

The solar and renewable energy industries are highly competitive and are continually evolving as participants strive to distinguish themselves within their markets and compete with the larger electric power industry. Within the global PV solar industry, we face intense competition from crystalline silicon solar module manufacturers. Existing or future solar module manufacturers might be acquired by larger companies with significant capital resources, thereby further intensifying competition with us. In addition, the introduction of a low cost disruptive technology could adversely affect our ability to compete, which could reduce our net sales and adversely affect our results of operations.

Even if demand for solar modules continues to grow, the rapid manufacturing capacity expansion undertaken by many module manufacturers in China and certain parts of Southeast Asia, particularly manufacturers of crystalline silicon cells, modules, and wafers, has created and may continue to cause periods of structural imbalance in which supply exceeds demand. See the Risk Factor entitled “Competition in solar markets globally and across the solar value chain is intense, and could remain that way for an extended period of time. An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition, and results of operations,” for additional information. In addition, we believe any significant decrease in the cost of silicon feedstock or polysilicon would reduce the manufacturing cost of crystalline silicon modules and lead to further pricing pressure for solar modules and potentially an oversupply of solar modules. We also believe many crystalline silicon cell and wafer manufacturers have substantially transitioned from lower efficiency BSF multi-crystalline cells (the legacy technology against which we have generally competed in our markets) to higher efficiency PERC mono-crystalline cells at competitive cost structures. As a result, we expect that in the near future, our primary competition will be mono-crystalline PERC based modules with higher conversion efficiencies. Additionally, while conventional solar modules, including the solar modules we produce, are monofacial, meaning their ability to produce energy is a function of direct and diffuse irradiance on their front side, certain manufacturers of mono-crystalline PERC solar modules offer bifacial modules that also capture diffuse irradiance on the back side of a module. Such technology can improve the overall energy production of a module relative to nameplate front-side efficiency when applied in certain applications and BoS configurations, which could potentially lower the overall levelized cost of electricity (“LCOE”), meaning the net present value of a system’s total life cycle costs divided by the quantity of energy that is expected to be produced over the system’s life, of a system when compared to systems using conventional solar modules, including the modules we produce. Additionally, we believe that our competitors are evaluating the possibility of transitioning from p-type to n-type mono-crystalline wafers and cells. If successful, such transition would further increase the efficiency and energy yield of their product. Finally, many of our competitors are promoting modules with larger overall area based on the use of larger silicon wafers. While the transition to such larger wafers would increase nameplate wattage, we believe the associated production cost would not improve significantly.

During any such period, our competitors could decide to reduce their sales prices in response to competition, even below their manufacturing costs, in order to generate sales, and may do so for a sustained period. Other competitors may have direct or indirect access to sovereign capital, which could enable such competitors to operate at minimal or negative operating margins for sustained periods of time. As a result, we may be unable to sell our solar modules or systems at attractive prices, or for a profit, during any period of excess supply of solar modules, which would reduce our net sales and adversely affect our results of operations. Additionally, we may decide to lower our average selling

prices to certain customers in certain markets in response to competition, which could also reduce our net sales and adversely affect our results of operations.

Problems with product quality or performance may cause us to incur significant and/or unexpected contractual damages and/or warranty and related expenses, damage our market reputation, and prevent us from maintaining or increasing our market share.

We perform a variety of module quality and life tests under different environmental conditions upon which we base our assessments of future module performance over the duration of the warranty. However, if our thin film solar modules perform below expectations, we could experience significant warranty and related expenses, damage to our market reputation, and erosion of our market share. With respect to our modules, we provide a limited warranty covering defects in materials and workmanship under normal use and service conditions for up to 12 years. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 98% of their labeled power output rating during the first year, with the warranty coverage reducing by a degradation factor every year thereafter throughout the limited power output warranty period of up to 30 years. Among other things, our solar module warranty also covers the resulting power output loss from cell cracking. As an alternative form of our standard limited module power output warranty, we have also offered an aggregated or system-level limited module performance warranty. This system-level limited module performance warranty is designed for utility-scale systems and provides 25-year system-level energy degradation protection. This warranty represents a practical expedient to address the challenge of identifying, from the potential millions of modules installed in a utility-scale system, individual modules that may be performing below warranty thresholds by focusing on the aggregate energy generated by the system rather than the power output of individual modules. The system-level limited module performance warranty is typically calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. As a result of these warranty programs, we bear the risk of product warranty claims long after we have sold our solar modules and recognized net sales.

If any of the assumptions used in estimating our module warranties prove incorrect, we could be required to accrue additional expenses, which could adversely impact our financial position, operating results, and cash flows. Although we have taken significant precautions to avoid a manufacturing excursion from occurring, any manufacturing excursions, including any commitments made by us to take remediation actions in respect of affected modules beyond the stated remedies in our warranties, could adversely impact our reputation, financial position, operating results, and cash flows.

Although our module performance warranties extend for up to 30 years, our oldest solar modules manufactured during the qualification of our pilot production line have only been in use since 2001. Accordingly, our warranties are based on a variety of quality and life tests that enable predictions of durability and future performance. These predictions, however, could prove to be materially different from the actual performance during the warranty period, causing us to incur substantial expense to repair or replace defective solar modules or provide financial remuneration in the future. For example, our solar modules could suffer various failure modes, including breakage, delamination, corrosion, or performance degradation in excess of expectations, and our manufacturing operations or supply chain could be subject to materials or process variations that could cause affected modules to fail or underperform compared to our expectations. These risks could be amplified as we implement design and process changes in connection with our efforts to improve our products and accelerate module wattage as part of our long-term strategic plans. In addition, if we increase the number of installations in extreme climates, we may experience increased failure rates due to deployment into such field conditions. Any widespread product failures may damage our market reputation, cause our net sales to decline, require us to repair or replace the defective modules or provide financial remuneration, and result in us taking voluntary remedial measures beyond those required by our standard warranty terms to enhance customer satisfaction, which could have a material adverse effect on our operating results.

In resolving claims under both the limited defect and power output warranties, we typically have the option of either repairing or replacing the covered modules or, under the limited power output warranty, providing additional

modules to remedy the power shortfall or making certain cash payments; however, historical versions of our module warranty did not provide a refund remedy. Consequently, we may be obligated to repair or replace the covered modules under such historical programs. As our manufacturing process may change from time-to-time in accordance with our technology roadmap, we may elect to stop production of older versions of our modules that would constitute compatible replacement modules. In some jurisdictions, our inability to provide compatible replacement modules could potentially expose us to liabilities beyond the limitations of our module warranties, which could adversely impact our reputation, financial position, operating results, and cash flows.

For PV solar power systems constructed for customers, we typically provide limited warranties for defects in engineering design, installation, and BoS part workmanship for a period of one to two years following the substantial completion of a system or a block within the system. In resolving claims under such BoS warranties, we have the option of remedying the defect through repair or replacement. As with our modules, these warranties are based on a variety of quality and life tests that enable predictions of durability and future performance. Any failures in BoS equipment or system construction beyond our expectations may also adversely impact our reputation, financial position, operating results, and cash flows.

In addition, our contracts with customers may include provisions with particular product specifications, minimum wattage requirements, and specified delivery schedules. These contracts may be terminated, or we may incur significant liquidated damages or other damages, if we fail to perform our contractual obligations. In addition, our costs to perform under these contracts may exceed our estimates, which could adversely impact our profitability. Any failures to comply with our contracts for the sale of our modules could adversely impact our reputation, financial position, operating results, and cash flows.

Our failure to further refine our technology, reduce module manufacturing and BoS costs, and develop and introduce improved PV products could render our solar modules or systems uncompetitive and reduce our net sales, profitability, and/or market share.

We need to continue to invest significant financial resources in R&D to continue to improve our module conversion efficiencies, lower the LCOE of our PV solar power systems, and otherwise keep pace with technological advances in the solar industry. However, R&D activities are inherently uncertain, and we could encounter practical difficulties in commercializing our research results. We seek to continuously improve our products and processes, including, for example, certain planned improvements to our Series 6 module technology and manufacturing capabilities, such as the implementation of our copper replacement (or “CuRe”) program or the increase to our module form factor (which we refer to as “Series 6 Plus”), and the resulting changes carry potential risks in the form of delays, performance, additional costs, or other unintended contingencies. In addition, our significant expenditures for R&D may not produce corresponding benefits. Other companies are developing a variety of competing PV technologies, including advanced multi-crystalline silicon cells, PERC or advanced p-type crystalline silicon cells, high-efficiency n-type crystalline silicon cells, bifacial solar modules, copper indium gallium diselenide thin films, amorphous silicon thin films, and new emerging technologies such as hybrid perovskites, which could produce solar modules or systems that prove more cost-effective or have better performance than our solar modules or systems.

In addition, other companies could potentially develop a highly reliable renewable energy system that mitigates the intermittent power generation drawback of many renewable energy systems, or offer other value-added improvements from the perspective of utilities and other system owners, in which case such companies could compete with us even if the LCOE associated with such new systems is higher than that of our systems. As a result, our solar modules or systems may be negatively differentiated or rendered obsolete by the technological advances of our competitors, which would reduce our net sales, profitability, and/or market share. In addition, we often forward price our products and services in anticipation of future cost reductions and technology improvements, and thus, an inability to further refine our technology and execute our module technology and cost reduction roadmaps could adversely affect our operating results.

Some of our manufacturing equipment is customized and sole sourced. If our manufacturing equipment fails or if our equipment suppliers fail to perform under their contracts, we could experience production disruptions and be unable to satisfy our contractual requirements.

Some of our manufacturing equipment, including manufacturing equipment related to the production of our Series 6 modules, is customized to our production lines based on designs or specifications that we provide to equipment manufacturers, which then undertake a specialized process to manufacture the custom equipment. As a result, the equipment is not readily available from multiple vendors and would be difficult to repair or replace if it were to become delayed, damaged, or stop working. If any piece of equipment fails, production along the entire production line could be interrupted. In addition, the failure of our equipment manufacturers to supply equipment in a timely manner or on commercially reasonable terms could delay our expansion or conversion plans, otherwise disrupt our production schedule, and/or increase our manufacturing costs, all of which would adversely impact our operating results.

Several of our key raw materials and components are either single-sourced or sourced from a limited number of suppliers, and their failure to perform could cause manufacturing delays and impair our ability to deliver solar modules to customers in the required quality and quantities and at a price that is profitable to us.

Our failure to obtain raw materials and components that meet our quality, quantity, and cost requirements in a timely manner could interrupt or impair our ability to manufacture our solar modules or increase our manufacturing costs. Several of our key raw materials and components are either single-sourced or sourced from a limited number of suppliers. As a result, the failure of any of our suppliers to perform could disrupt our supply chain and adversely impact our operations. In addition, some of our suppliers are smaller companies that may be unable to supply our increasing demand for raw materials and components as we expand our business. We may be unable to identify new suppliers or qualify their products for use on our production lines in a timely manner and on commercially reasonable terms. A constraint on our production may result in our inability to meet our capacity plans and/or our obligations under our customer contracts, which would have an adverse impact on our business. Additionally, reductions in our production volume may put pressure on suppliers, resulting in increased material and component costs.

A disruption in our supply chain for CdTe could interrupt or impair our ability to manufacture solar modules and could adversely impact our profitability and long-term growth prospects.

A key raw material used in our module production process is a CdTe compound. Tellurium, one of the main components of CdTe, is mainly produced as a by-product of copper refining, and therefore, its supply is largely dependent upon demand for copper. Our supply of CdTe could be limited if any of our current suppliers or any of our future suppliers fail to perform or are unable to acquire an adequate supply of tellurium in a timely manner or at commercially reasonable prices. If our current suppliers or any of our future suppliers cannot obtain sufficient tellurium, they could substantially increase prices or be unable to perform under their contracts. Furthermore, if our competitors begin to use or increase their demand for tellurium, our requirements for tellurium increase, new applications for tellurium become available, or adverse trade laws or policies restrict our ability to obtain tellurium from foreign vendors or make doing so cost prohibitive, the supply of tellurium and related CdTe compounds could be reduced and prices could increase. As we may be unable to pass such increases in the costs of our raw materials through to our customers, a substantial increase in tellurium prices or any limitations in the supply of tellurium could adversely impact our profitability and long-term growth objectives.

Our future success depends on our ability to effectively balance manufacturing production with market demand, convert existing production facilities to support new product lines, decrease our cost per watt, and, when necessary, continue to build new manufacturing plants over time in response to market demand, all of which are subject to risks and uncertainties.

Our future success depends on our ability to effectively balance manufacturing production with market demand, convert existing production facilities to support new product lines, decrease our cost per watt, and increase our manufacturing capacity in a cost-effective and efficient manner. If we cannot do so, we may be unable to decrease our cost per watt, maintain our competitive position, sustain profitability, expand our business, or create long-term shareholder value. Our ability to decrease our cost per watt, expand production capacity, or convert existing production facilities to support new product lines is subject to significant risks and uncertainties, including the following:

- failure to reduce manufacturing material, labor, or overhead costs;
- an inability to increase production throughput or the average power output per module;
- failure to effectively manage logistics costs associated with the shipping, handling, storage, and distribution of our modules;
- delays and cost overruns as a result of a number of factors, many of which may be beyond our control, such as our inability to secure successful contracts with equipment vendors;
- our custom-built equipment taking longer and costing more to manufacture than expected and not operating as designed;
- delays or denial of required approvals by relevant government authorities;
- an inability to hire qualified staff;
- failure to execute our expansion or conversion plans effectively;
- difficulty in balancing market demand and manufacturing production in an efficient and timely manner, potentially causing our manufacturing capacity to be constrained in some future periods or over-supplied in others; and
- incurring manufacturing asset write-downs, write-offs, and other charges and costs, which may be significant, during those periods in which we idle, slow down, shut down, convert, or otherwise adjust our manufacturing capacity.

If our estimates regarding the future costs of collecting and recycling CdTe solar modules covered by our solar module collection and recycling program are incorrect, we could be required to accrue additional expenses and face a significant unplanned cash burden.

As necessary, we fund any incremental amounts for our estimated collection and recycling obligations on an annual basis based on the estimated costs of collecting and recycling covered modules, estimated rates of return on our restricted marketable securities, and an estimated solar module life of 25 years less amounts already funded in prior years. We estimate the cost of our collection and recycling obligations based on the present value of the expected future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging materials; the cost of freight from the solar module installation sites to a recycling center; material, labor, and capital costs; and by-product credits for certain materials recovered during the recycling process. We base these estimates on our experience collecting and recycling solar modules and certain assumptions regarding costs at the time the

solar modules will be collected and recycled. If our estimates prove incorrect, we could be required to accrue additional expenses and could also face a significant unplanned cash burden at the time we realize our estimates are incorrect or end users return their modules, which could adversely affect our operating results. In addition, participating end users can return their modules covered under the collection and recycling program at any time. As a result, we could be required to collect and recycle covered CdTe solar modules earlier than we expect.

Our failure to protect our intellectual property rights may undermine our competitive position, and litigation to protect our intellectual property rights or defend against third-party allegations of infringement may be costly.

Protection of our proprietary processes, methods, and other technology is critical to our business. Failure to protect and monitor the use of our existing intellectual property rights could result in the loss of valuable technologies. We rely primarily on patents, trademarks, trade secrets, copyrights, and contractual restrictions to protect our intellectual property. We regularly file patent applications to protect certain inventions arising from our R&D and are currently pursuing such patent applications in various countries in accordance with our strategy for intellectual property in that jurisdiction. Our existing patents and future patents could be challenged, invalidated, circumvented, or rendered unenforceable. Our pending patent applications may not result in issued patents, or if patents are issued to us, such patents may not be sufficient to provide meaningful protection against competitors or against competitive technologies.

We also rely on unpatented proprietary manufacturing expertise, continuing technological innovation, and other trade secrets to develop and maintain our competitive position. Although we generally enter into confidentiality agreements with our associates and third parties to protect our intellectual property, such confidentiality agreements are limited in duration and could be breached and may not provide meaningful protection for our trade secrets or proprietary manufacturing expertise. Adequate remedies may not be available in the event of unauthorized use or disclosure of our trade secrets and manufacturing expertise. In addition, others may obtain knowledge of our trade secrets through independent development or legal means. The failure of our patents or confidentiality agreements to protect our processes, equipment, technology, trade secrets, and proprietary manufacturing expertise, methods, and compounds could have a material adverse effect on our business. In addition, effective patent, trademark, copyright, and trade secret protection may be unavailable or limited in some foreign countries, especially any developing countries into which we may expand our operations. In some countries, we have not applied for patent, trademark, or copyright protection.

Third parties may infringe or misappropriate our proprietary technologies or other intellectual property rights, which could have a material adverse effect on our business, financial condition, and operating results. Policing unauthorized use of proprietary technology can be difficult and expensive. Additionally, litigation may be necessary to enforce our intellectual property rights, protect our trade secrets, or determine the validity and scope of the proprietary rights of others. We cannot ensure that the outcome of such potential litigation will be in our favor, and such litigation may be costly and may divert management attention and other resources away from our business. An adverse determination in any such litigation may impair our intellectual property rights and may harm our business, prospects, and reputation. In addition, we have no insurance coverage against such litigation costs and would have to bear all costs arising from such litigation to the extent we are unable to recover them from other parties.

If any future production lines are not built in line with committed schedules, it may adversely affect our future growth plans. If any future production lines do not achieve operating metrics similar to our existing production lines, our solar modules could perform below expectations and cause us to lose customers.

If we are unable to systematically replicate our production lines over time and achieve operating metrics similar to our existing production lines, our manufacturing capacity could be substantially constrained, our manufacturing costs per watt could increase, and our growth could be limited. Such factors may result in lower net sales and lower net income than we anticipate. For instance, future production lines could produce solar modules that have lower conversion efficiencies, higher failure rates, and/or higher rates of degradation than solar modules from our existing

production lines, and we could be unable to determine the cause of the lower operating metrics or develop and implement solutions to improve performance.

Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in the United States and/or foreign countries.

We have significant manufacturing, development, sales, and marketing operations both within and outside the United States and expect to continue to expand our operations worldwide. As a result, we are subject to the legal, political, social, tax, and regulatory requirements and economic conditions of many jurisdictions.

Risks inherent to international operations include, but are not limited to, the following:

- difficulty in enforcing agreements in foreign legal systems;
- varying degrees of protection afforded to foreign investments in the countries in which we operate and irregular interpretations and enforcement of laws and regulations in such jurisdictions;
- foreign countries may impose additional income and withholding taxes or otherwise tax our foreign operations, impose tariffs, or adopt other restrictions on foreign trade and investment, including currency exchange controls;
- fluctuations in exchange rates may affect demand for our products and services and may adversely affect our profitability and cash flows in U.S. dollars to the extent that our net sales or our costs are denominated in a foreign currency and the cost associated with hedging the U.S. dollar equivalent of such exposures is prohibitive; the longer the duration of such foreign currency exposure, the greater the risk;
- anti-corruption compliance issues, including the costs related to the mitigation of such risk;
- risk of nationalization or other expropriation of private enterprises;
- changes in general economic and political conditions in the countries in which we operate, including changes in government incentive provisions;
- unexpected adverse changes in U.S. or foreign laws or regulatory requirements, including those with respect to environmental protection, import or export duties, and quotas;
- opaque approval processes in which the lack of transparency may cause delays and increase the uncertainty of project approvals;
- difficulty in staffing and managing widespread operations;
- difficulty in repatriating earnings;
- difficulty in negotiating a successful collective bargaining agreement in applicable foreign jurisdictions;
- trade barriers such as export requirements, tariffs, taxes, local content requirements, anti-dumping regulations and requirements, and other restrictions and expenses, which could increase the effective price of our solar modules and make us less competitive in some countries or increase the costs to perform under our existing contracts; and
- difficulty of, and costs relating to, compliance with the different commercial and legal requirements of the overseas countries in which we offer and sell our solar modules.

Our business in foreign markets requires us to respond to rapid changes in market conditions in these countries. Our overall success as a global business depends, in part, on our ability to succeed in differing legal, regulatory, economic, social, and political conditions. We may not be able to timely develop and implement policies and strategies that will be effective in each location where we do business.

Risks Related to Our Systems Business

Project development or construction activities may not be successful; projects under development may not receive required permits, real property rights, PPAs, interconnection, and transmission arrangements; or financing or construction may not commence or proceed as scheduled, which could increase our costs and impair our ability to recover our investments.

The development and construction of solar energy generation facilities and other energy infrastructure projects involve numerous risks. We may be required to spend significant sums for land and interconnection rights, preliminary engineering, permitting, legal services, and other expenses before we can determine whether a project is feasible, economically attractive, or capable of being built. Success in developing a particular project is contingent upon, among other things:

- obtaining financeable land rights, including land rights for the project site, transmission lines, and environmental mitigation;
- entering into financeable arrangements for the purchase of the electrical output, capacity, ancillary services, and renewable energy attributes generated by the project;
- receipt from governmental agencies of required environmental, land-use, and construction and operation permits and approvals;
- receipt of tribal government approvals for projects on tribal land;
- receipt of governmental approvals related to the presence of any protected or endangered species or habitats, migratory birds, wetlands or other jurisdictional water resources, and/or cultural resources;
- negotiation of development agreements, public benefit agreements, and other agreements to compensate local governments for project impacts;
- negotiation of state and local tax abatement and incentive agreements;
- receipt of rights to interconnect the project to the electric grid or to transmit energy;
- negotiation of satisfactory EPC agreements, including agreements with third-party EPC providers;
- securing necessary rights of way for access and transmission lines;
- securing necessary water rights for project construction and operation;
- securing appropriate title coverage, including coverage for mineral rights, mechanics' liens, etc.;
- obtaining financing, including debt, equity, and funds associated with the monetization of tax credits and other tax benefits;
- payment of PPA, interconnection, and other deposits (some of which are non-refundable);

- providing required payment and performance security for the development of the project, such as through the provision of letters of credit; and
- timely implementation and satisfactory completion of construction.

Successful completion of a particular project may be adversely affected, delayed and/or rendered infeasible by numerous factors, including:

- delays in obtaining and maintaining required governmental permits and approvals, including appeals of approvals obtained;
- potential permit and litigation challenges from project stakeholders, including local residents, environmental organizations, labor organizations, tribes, and others who may oppose the project;
- in connection with any such permit and litigation challenges, grants of injunctive relief to stop development and/or construction of a project;
- discovery of unknown impacts to protected or endangered species or habitats, migratory birds, wetlands or other jurisdictional water resources, and/or cultural resources at project sites;
- discovery of unknown title defects;
- discovery of unknown environmental conditions;
- unforeseen engineering problems;
- construction delays and contractor performance shortfalls;
- work stoppages;
- cost over-runs;
- labor, equipment, and material supply shortages, failures, or disruptions;
- cost or schedule impacts arising from changes in federal, state, or local land-use or regulatory policies;
- changes in electric utility procurement practices;
- risks arising from potential transmission grid congestion, limited transmission capacity, and grid reliability constraints;
- project delays that could adversely impact our ability to maintain interconnection rights;
- additional complexities when conducting project development or construction activities in foreign jurisdictions (either on a stand-alone basis or in collaboration with local business partners), including operating in accordance with the FCPA and applicable local laws and customs;
- unfavorable tax treatment or adverse changes to tax policy;
- adverse weather conditions;
- water shortages;

- adverse environmental and geological conditions;
- force majeure and other events out of our control;
- climate change; and
- change in law risks.

If we fail to complete the development of a solar energy project, fail to meet one or more agreed upon target construction milestone dates, fail to achieve system-level capacity, or fail to meet other contract terms, we may be subject to forfeiture of significant deposits under PPAs or interconnection agreements or termination of such agreements, incur significant liquidated damages, penalties, and/or other obligations under other project related agreements, and may not be able to recover our investment in the project. If we are unable to complete the development of a solar energy project, we may impair some or all of these capitalized investments, which would have an adverse impact on our net income in the period in which the loss is recognized.

We may be unable to acquire or lease land, obtain necessary interconnection and transmission rights, and/or obtain the approvals, licenses, permits, and electric transmission grid interconnection and transmission rights necessary to build and operate PV solar power systems in a timely and cost effective manner, and regulatory agencies, local communities, labor unions, tribes, or other third parties may delay, prevent, or increase the cost of construction and operation of the system we intend to build.

In order to construct and operate our PV solar power systems, we need to acquire or lease land and rights of way, obtain interconnection rights, negotiate agreements with affected transmission systems, and obtain all necessary federal, state, county, local, and foreign approvals, licenses, and permits, as well as rights to interconnect the systems to the transmission grid and transmit energy generated from the system. We may be unable to acquire the land or lease interests needed, may not obtain or maintain satisfactory interconnection rights, may have difficulty reaching agreements with affected transmission systems and/or incur unexpected network upgrade costs, may not receive or retain the requisite approvals, permits, licenses, and interconnection and transmission rights, or may encounter other problems that could delay or prevent us from successfully constructing and operating such systems.

Many of our proposed projects are located on or require access through public lands administered by federal and state agencies pursuant to competitive public leasing and right-of-way procedures and processes. Our projects may also be located on tribal land pursuant to land agreements that must be approved by tribal governments and federal agencies. The authorization for the use, construction, and operation of systems and associated transmission facilities on federal, state, tribal, and private lands will also require the assessment and evaluation of mineral rights, private rights-of-way, and other easements; environmental, agricultural, cultural, recreational, and aesthetic impacts; and the likely mitigation of adverse impacts to these and other resources and uses. The inability to obtain the required permits and other federal, state, local, and tribal approvals, and any excessive delays in obtaining such permits and approvals due, for example, to litigation or third-party appeals, could potentially prevent us from successfully constructing and operating such systems in a timely manner and could result in the potential forfeiture of any deposit we have made with respect to a given project. Moreover, project approvals subject to project modifications and conditions, including mitigation requirements and costs, could affect the financial success of a given project. Changing regulatory requirements and the discovery of unknown site conditions could also affect the financial success of a given project.

In addition, local labor unions may increase the cost of project development in California and elsewhere. We may also be subject to labor unavailability and/or increased union labor requirements due to multiple simultaneous projects in a geographic region.

We may not be able to obtain long-term contracts for the sale of power produced by our projects at prices and on other terms favorable to attract financing and other investments; with regard to projects for which electricity is or will be sold on an open contract basis rather than under a PPA, our results of operations could be adversely affected to the extent prevailing spot electricity prices decline in an unexpected manner.

Obtaining long-term contracts for the sale of power produced by our projects at prices and on other terms favorable to us is essential for obtaining financing and commencing construction of our projects. We must compete for PPAs against other developers of solar and renewable energy projects. This intense competition for PPAs has resulted in downward pressure on PPA pricing for newly contracted projects. In addition, we believe the solar industry may experience periods of structural imbalance between supply and demand that put downward pressure on module pricing. This downward pressure on module pricing also creates downward pressure on PPA pricing for newly contracted projects. See the Risk Factor entitled "Competition at the system level can be intense, thereby potentially exerting downward pressure on system-level profit margins industry-wide, which could reduce our profitability and adversely affect our results of operations" for additional information. If falling PPA pricing results in forecasted project revenue that is insufficient to generate returns anticipated to be demanded in the project sale market, our business, financial condition, and results of operations could be adversely affected.

Other sources of power, such as natural gas-fired power plants, have historically been cheaper than the cost of solar power, and certain types of generation projects, such as natural gas-fired power plants, can deliver power on a firm basis. The inability to compete successfully against other power producers or otherwise enter into PPAs favorable to us would negatively affect our ability to develop and finance our projects and negatively impact our revenue. In addition, the availability of PPAs is dependent on utility and corporate energy procurement practices that could evolve and shift allocation of market risks over time. In addition, PPA availability and terms are a function of a number of economic, regulatory, tax, and public policy factors, which are also subject to change. Furthermore, certain of our projects may be scheduled for substantial completion prior to the commencement of a long-term PPA with a major off-taker, in which case we would be required to enter into a stub-period PPA for the intervening time period or sell down the project. We may not be able to do either on terms that are commercially attractive to us. Finally, the electricity from certain of our projects is or is expected to be sold on an open contract basis for a period of time rather than under a PPA. If prevailing spot electricity prices relating to any such project were to decline in an unexpected manner, such project may decline in value and our results of operations could otherwise be adversely affected.

Even if we are able to obtain PPAs favorable to us, the ability of our off-take counterparties to fulfill their contractual obligations to us depends, in part, on their creditworthiness. These counterparties, such as our investor-owned utility counterparties in the state of California, which may have liability for damages associated with California's recent wildfires, could suffer a deterioration of their creditworthiness or become, and in one case has become, subject to bankruptcy, insolvency, or liquidation proceedings or otherwise. For example, in January 2019, PG&E Corporation and Pacific Gas and Electric Company filed voluntary petitions for relief under chapter 11 of title 11 of the United States Code in the U.S. Bankruptcy Court for the Northern District of California. If one or more of our counterparties becomes subject to bankruptcy, insolvency, or liquidation proceedings, or if the creditworthiness of any counterparty deteriorates, we could experience an underpayment or nonpayment under PPA agreements and our ability to attract debt or equity financing for our projects could be impaired.

Lack of transmission capacity availability, potential upgrade costs to the transmission grid, and other system constraints could significantly impact our ability to build PV solar power systems and generate solar electricity power sales.

In order to deliver electricity from our PV solar power systems to our customers, our projects generally need to connect to the transmission grid. The lack of available capacity on the transmission grid could substantially impact our projects and cause reductions in project size, delays in project implementation, increases in costs from transmission upgrades, and potential forfeitures of any deposit we have made with respect to a given project. In addition, there could be unexpected costs required to complete transmission and network upgrades that adversely

impact the economic viability of our PV solar power systems. These transmission and network issues and costs, as well as issues relating to the availability of large equipment such as transformers and switchgear, could significantly impact our ability to interconnect our systems to the transmission grid, build such systems, and generate solar electricity sales.

Competition at the system level can be intense, thereby potentially exerting downward pressure on system-level profit margins industry-wide, which could reduce our profitability and adversely affect our results of operations.

The significant decline in PV solar module prices over the last several years continues to create a challenging environment for module manufacturers, but it has also helped drive demand for solar electricity worldwide. Aided by such lower module prices, our customers and potential customers have in many cases been willing and able to bid aggressively for new projects and PPAs, using low cost assumptions for modules, BoS parts, installation, maintenance, and other costs as the basis for such bids. Relatively low barriers to entry for solar project developers, including those we compete with, have led to, depending on the market and other factors, intense competition at the system level, which may result in an environment in which system-level pricing falls rapidly, thereby further increasing demand for solar energy solutions but constraining the ability for project developers, and diversified companies such as First Solar to sustain meaningful and consistent profitability. Accordingly, while we believe our system offerings and experience are positively differentiated in many cases from that of our competitors, we may fail to correctly identify our competitive position, we may be unable to develop or maintain a sufficient magnitude of new system projects at economically attractive rates of return, and we may not otherwise be able to achieve meaningful profitability under our long-term strategic plans.

Depending on the market opportunity, we may be at a disadvantage compared to potential system-level competitors. For example, certain of our competitors may have a stronger and/or more established localized business presence in a particular geographic region. Certain of our competitors may be larger entities that have greater financial resources and greater overall brand name recognition than we do and, as a result, may be better positioned to impact customer behavior or adapt to changes in the industry or the economy as a whole. Certain competitors may also have direct or indirect access to sovereign capital and/or other incentives, which could enable such competitors to operate at minimal or negative operating margins for sustained periods of time.

Additionally, depending on the geographic area, certain potential customers may still be in the process of educating themselves about the points of differentiation among various available providers of PV solar energy solutions, including a company's proven overall experience and bankability, system design and optimization expertise, grid interconnection and stabilization expertise, and proven O&M capabilities. If we are unable over time to meaningfully differentiate our offerings at scale, or if available competitive pricing is prioritized over the value we believe is added through our system offerings and experience, from the viewpoint of our potential customer base, our business, financial condition, and results of operations could be adversely affected.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our U.S. project development business, we have determined it is in the best interest of our stockholders to pursue the sale of this business. On January 24, 2021, we entered into an agreement with OMERS for the sale of our U.S. project development operations, which comprises the business of developing, contracting for the construction of, and selling utility-scale PV solar power systems. The transaction includes our approximately 10 GW_{AC} utility-scale solar project pipeline, including the advanced-stage Horizon, Madison, Ridgely, Rabbitbrush, and Oak Trail projects that are

expected to commence construction in the next two years; the 30 MW_{AC} Barilla Solar project, which is operational; and certain other equipment. In addition, OMERS has agreed to certain module purchase commitments. The completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from FERC, the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by CFIUS, and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Our systems business is largely dependent on us and third parties arranging financing from various sources, which may not be available or may only be available on unfavorable terms or in insufficient amounts.

The construction of large utility-scale solar power projects in many cases requires project financing, including non-recourse project specific debt financing in the bank loan market and institutional debt capital markets. Uncertainties exist as to whether our planned projects will be able to access the debt markets in a magnitude sufficient to finance their construction. If we, or purchasers of our projects, are unable to arrange such financing or if it is only available on unfavorable terms, we may be unable to fully execute our systems business plans. In addition, we generally expect to sell interests in our projects by raising project equity capital from tax-oriented, strategic industry, and other equity investors. Such equity sources may not be available or may only be available in insufficient amounts or on unfavorable terms, in which case our ability to sell interests in our projects may be delayed or limited, and our business, financial condition, and results of operations may be adversely affected. Uncertainty in or adverse changes to tax policy or tax law, including the amount of ITC or accelerated depreciation, and any limitations on the value or availability to potential investors of tax incentives that benefit solar energy projects such as the ITC and accelerated depreciation deductions, as well as the reduction of the U.S. corporate income tax rate to 21% under the Tax Cuts and Jobs Act (the "Tax Act") (which could reduce the value of these tax related incentives) may reduce project values or negatively affect our ability to timely secure equity investment for our projects.

Depending on prevailing conditions in the credit markets, interest rates and other factors, such financing may not be available or may only be available on unfavorable terms or in insufficient amounts. If third parties are limited in their ability to access financing to support their purchase of system construction services from us, we may not realize the cash flows that we expect from such sales, which could adversely affect our ability to invest in our business and/or generate revenue. See also the Risk Factor above entitled "An increase in interest rates or tightening of the supply of capital in the global financial markets (including a reduction in total tax equity availability) could make it difficult for customers to finance the cost of a PV solar power system and could reduce the demand for our modules or systems and/or lead to a reduction in the average selling price for such offerings."

Developing solar power projects may require significant upfront investment prior to the signing of sales contracts, which could adversely affect our business and results of operations.

Solar power project development cycles, which span the time between the identification of a site location and the construction of a system, vary substantially and can take years to mature. As a result of these long project development cycles, we may need to make significant up-front investments of resources (including, for example, payments for land rights, large transmission and PPA deposits, or other payments, which may be non-refundable) in advance of the signing of sales contracts, receiving cash proceeds, or recognizing any revenue. Our potential inability to enter into sales contracts with customers on favorable terms after making such upfront investments could cause us to forfeit certain nonrefundable payments or otherwise adversely affect our business and results of operations. Furthermore, we may become constrained in our ability to simultaneously fund our other business operations and these systems investments through our long project development cycles.

Our liquidity may also be adversely affected to the extent the project sales market weakens and we are unable to sell interests in our solar projects on pricing, timing, and other terms commercially acceptable to us. In such a scenario, we may choose to continue to temporarily own and operate certain solar projects for a period of time, after which interests in the projects may be sold to third parties.

We may be subject to unforeseen costs, liabilities, or obligations when providing O&M services. In addition, certain of our O&M agreements include provisions permitting the counterparty to terminate the agreement without cause.

We may provide ongoing O&M services to system owners under separate service agreements, pursuant to which we generally perform standard activities associated with operating a PV solar power system, including 24/7 monitoring and control, compliance activities, energy forecasting, and scheduled and unscheduled maintenance. Our costs to perform these services are estimated at the time of entering into the O&M agreement for a particular project, and these are reflected in the price we charge our customers, including certain agreements which feature fixed pricing. Should our estimates of O&M costs prove inaccurate (including any unexpected serial defects, unavailability of parts, or increases in inflation, labor, or BoS costs), our growth strategy and results of operations could be adversely affected. Because of the potentially long-term nature of these O&M agreements, the adverse impacts on our results of operations could be significant, up to our limitation of liability capped under the terms of the agreements. In addition, certain of our O&M agreements include provisions permitting the counterparty to terminate the agreement without cause or for convenience. The exercise of such termination rights, or the use of such rights as leverage to re-negotiate terms and conditions of an O&M agreement, including pricing terms, could adversely impact our results of operations. We may also be subject to substantial costs in the event we do not achieve certain thresholds under the effective availability guarantees included in our O&M agreements.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Our systems business is subject to regulatory oversight and liability if we fail to operate PV solar power systems in compliance with electric reliability rules.

The ongoing O&M services that we provide for system owners may subject us to regulation by the North American Electric Reliability Corporation (“NERC”), or its designated regional representative, as a generator operator (“GOP”) under electric reliability rules filed with FERC. Our failure to comply with the reliability rules applicable to GOPs could subject us to substantial fines by NERC, subject to FERC’s review. In addition, the system owners that receive our O&M services may be regulated by NERC as generator owners (“GO”) and we may incur liability for GO violations and fines levied by NERC, subject to FERC’s review, based on the terms of our O&M agreements. As a system owner and operator, we may in the future be subject to regulation by NERC as a GO.

Risks Related to Regulations

Existing regulations and policies, changes thereto, and new regulations and policies may present technical, regulatory, and economic barriers to the purchase and use of PV solar products or systems, which may significantly reduce demand for our modules, systems, or services.

The market for electricity generation products is heavily influenced by federal, state, local, and foreign government regulations and policies concerning the electric utility industry, as well as policies promulgated by electric utilities. These regulations and policies often relate to electricity pricing and interconnection of customer-owned electricity generation. In the United States and in a number of other countries, these regulations and policies have been modified in the past and may be modified again in the future. These regulations and policies could deter end-user purchases of PV solar products or systems and investment in the R&D of PV solar technology. For example, without a mandated regulatory exception for PV solar power systems, system owners are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid. To the extent these interconnection standby fees are applicable to PV solar power systems, it is likely that they would increase the cost of such systems, which could make the systems less desirable, thereby adversely affecting our business, financial condition, and results of operations. In addition, with respect to utilities that utilize a peak-hour pricing policy or time-of-use pricing methods whereby the price of electricity is adjusted based on electricity supply and demand, electricity generated by PV solar power systems currently benefits from competing primarily with expensive peak-hour electricity, rather than the less expensive average price of electricity. Modifications to the peak-hour pricing policies of utilities, such as to a flat rate for all times of the day, would require PV solar power systems to have lower prices in order to compete with the price of electricity from other sources, which could adversely impact our operating results.

Our modules, systems, and services are often subject to oversight and regulation in accordance with national and local ordinances relating to building codes, safety, environmental protection, utility interconnection and metering, and other matters, and tracking the requirements of individual jurisdictions is complex. Any new government regulations or utility policies pertaining to our modules, systems, or services may result in significant additional expenses to us or our customers and, as a result, could cause a significant reduction in demand for our modules, systems, or services. In addition, any regulatory compliance failure could result in significant management distraction, unplanned costs, and/or reputational damage.

We could be adversely affected by any violations of the FCPA, the U.K. Bribery Act, and other foreign anti-bribery laws.

The FCPA generally prohibits companies and their intermediaries from making improper payments to non-U.S. government officials for the purpose of obtaining or retaining business. Other countries in which we operate also have anti-bribery laws, some of which prohibit improper payments to government and non-government persons and entities, and others (e.g., the FCPA and the U.K. Bribery Act) extend their application to activities outside their country of origin. Our policies mandate compliance with all applicable anti-bribery laws. We currently operate in, and may further expand into, key parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. In addition, due to the level of regulation in our industry, our operations in certain jurisdictions, including China, India, South America, and the Middle East, require substantial government contact, either directly by us or through intermediaries over whom we have less direct control, such as subcontractors, agents, and partners (such as joint venture partners), where norms can differ from U.S. standards. Although we have implemented policies, procedures, and, in certain cases, contractual arrangements designed to facilitate compliance with these anti-bribery laws, our officers, directors, associates, subcontractors, agents, and partners may take actions in violation of our policies, procedures, contractual arrangements, and anti-bribery laws. Any such violation, even if prohibited by our policies, could subject us and such persons to criminal and/or civil penalties or other sanctions potentially by government prosecutors from more than one country, which could have a material adverse effect on our business, financial condition, cash flows, and reputation.

Environmental obligations and liabilities could have a substantial negative impact on our business, financial condition, and results of operations.

Our operations involve the use, handling, generation, processing, storage, transportation, and disposal of hazardous materials and are subject to extensive environmental laws and regulations at the national, state, local, and international levels. These environmental laws and regulations include those governing the discharge of pollutants into the air and water, the use, management, and disposal of hazardous materials and wastes, the cleanup of contaminated sites, and occupational health and safety. As we expand our business into foreign jurisdictions worldwide, our environmental compliance burden may continue to increase both in terms of magnitude and complexity. We have incurred and may continue to incur significant costs in complying with these laws and regulations. In addition, violations of, or liabilities under, environmental laws or permits may result in restrictions being imposed on our operating activities or in our being subject to substantial fines, penalties, criminal proceedings, third-party property damage or personal injury claims, cleanup costs, or other costs. While we believe we are currently in substantial compliance with applicable environmental requirements, future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations, or the discovery of presently unknown environmental conditions may require expenditures that could have a material adverse effect on our business, financial condition, and results of operations.

Our solar modules contain CdTe and other semiconductor materials. Elemental cadmium and certain of its compounds are regulated as hazardous materials due to the adverse health effects that may arise from human exposure. Based on existing research, the risks of exposure to CdTe are not believed to be as serious as those relating to exposure to elemental cadmium due to CdTe's limited bioavailability. In our manufacturing operations, we maintain engineering controls to minimize our associates' exposure to cadmium compounds and require our associates who handle cadmium compounds to follow certain safety procedures, including the use of personal protective equipment such as respirators, chemical goggles, and protective clothing. Relevant studies and third-party peer reviews of our technology have concluded that the risk of exposure to cadmium or cadmium compounds from our end-products is negligible. In addition, the risk of exposure is further minimized by the encapsulated nature of these materials in our products, the physical properties of cadmium compounds used in our products, and the recycling or responsible disposal of our modules. While we believe that these factors and procedures are sufficient to protect our associates, end users, and the general public from adverse health effects that may arise from cadmium exposure, we cannot ensure that human or environmental exposure to cadmium or cadmium compounds used in our products will not occur. Any such exposure could result in future third-party claims against us, damage to our reputation, and heightened regulatory scrutiny, which could limit or impair our ability to sell and distribute our products. The occurrence of future events such as these could have a material adverse effect on our business, financial condition, and results of operations.

The use of cadmium or cadmium compounds in various products is also coming under increasingly stringent governmental regulation. Future regulation in this area could impact the manufacturing, sale, collection, and recycling of solar modules and could require us to make unforeseen environmental expenditures or limit our ability to sell and distribute our products. For example, European Union Directive 2011/65/EU on the Restriction of the Use of Hazardous Substances ("RoHS") in electrical and electronic equipment (the "RoHS Directive") restricts the use of certain hazardous substances, including cadmium and its compounds, in specified products. Other jurisdictions, such as China, have adopted similar legislation or are considering doing so. Currently, PV solar modules are explicitly excluded from the scope of RoHS (Article 2), as adopted by the European Parliament and the Council in June 2011. The next general review of the RoHS Directive is scheduled for 2021, involving a broader discussion of the existing scope. In preparation for the next RoHS revision, the European Commission has started a number of pre-regulatory studies and assessments relating to the addition of new substances to the existing RoHS framework, as well as the revision and optimization of the exemption process. It is unclear to what extent the existing scope exclusions will be discussed or maintained in future directives. If PV modules were to be included in the scope of future RoHS revisions without an exemption or exclusion, we would be required to redesign our solar modules to reduce cadmium and other affected hazardous substances to the maximum allowable concentration thresholds in the RoHS Directive in order to continue to offer them for sale within the EU. As such actions would be

impractical, this type of regulatory development would effectively close the EU market to us, which could have a material adverse effect on our business, financial condition, and results of operations.

Risks Related to the COVID-19 Pandemic

The COVID-19 pandemic could materially impact our business, financial condition, and results of operations.

The COVID-19 pandemic has continued to have an unprecedented impact on the United States, Malaysia, and other countries throughout the world, including those in which we do business or have operations. Although as of the date of this filing, we have not been materially impacted by the COVID-19 pandemic, the pandemic could materially impact our business, financial condition, and results of operations in the future. The extent to which the COVID-19 pandemic could impact us continues to be highly uncertain and cannot be predicted, and will depend largely on subsequent developments, including the severity and duration of the pandemic, measures taken to contain the spread of the virus, such as restrictions on travel and gatherings of people and temporary closures of or limitations on businesses and other commercial activities, and the timing and nature of policies implemented by governmental authorities to ease such measures.

As a result of the COVID-19 pandemic and these related containment measures and reopening policies, we may be subject to significant risks, which have the potential to materially and adversely impact our business, financial condition, and results of operations, including the following:

- the continued economic disruption caused by the COVID-19 pandemic may result in a long-term tightening of the supply of capital in global financial markets (including, in the United States, a reduction in total tax equity availability), which could make it difficult for purchasers of our modules or our development projects to secure the debt or equity capital necessary to finance a PV solar power system, thereby delaying or reducing demand for our modules or these projects;

- purchasers of PV modules may delay module procurement in response to the COVID-19 pandemic, which may result in additional pressure on global demand and average selling prices for modules, and may exacerbate structural imbalances between global PV module supply and demand;

- we may at any time be ordered by governmental authorities, or we may determine, based on our understanding of the recommendations or orders of governmental authorities, that we have to curtail or cease business operations or activities, including manufacturing;

- the failure of our suppliers or vendors to supply materials or equipment, or the failure of our vendors to install, repair, or replace our specialized equipment, due to the COVID-19 pandemic, related containment measures, or limitations on logistics providers' ability to operate, may idle, slowdown, shutdown, or otherwise cause us to adjust our manufacturing capacity. We have incurred manufacturing charges associated with the ongoing COVID-19 pandemic;

- the COVID-19 pandemic and related containment measures may result in us incurring delays in obtaining, or failing to obtain, the approvals or rights that are required for our development projects to proceed, such as permitting, interconnection, or land usage approvals or rights, and the COVID-19 pandemic and related containment measures may delay or prevent the performance by third parties of activities related to the development of these projects, such as interconnection, engineering, procurement, construction, and other activities;

- we perform substantial R&D to continue to improve our module wattage (or conversion efficiency), lower our module cost per watt, lower the overall LCOE of our PV solar power systems, and otherwise keep pace with technological advances in the solar industry. The COVID-19 pandemic and related containment

measures, including the unavailability of our personnel and third-party partners who are engaged in R&D activities, may inhibit our R&D efforts or our ability to timely advance or commercialize these efforts; and

- in response to the COVID-19 pandemic, the vast majority of our associates who are capable of performing their function remotely are telecommuting (i.e., working from home). While we have instituted security measures to minimize the likelihood and impact of a cybersecurity incident with respect to associates utilizing technological communications tools, these measures may be inadequate to prevent a cybersecurity breach because of the unprecedented number of associates continuously using these tools. Recently, there have been reports of a surge in widespread cyber-attacks during the COVID-19 pandemic. Any increase in the frequency or scope of cyber-attacks during the COVID-19 pandemic may exacerbate the aforementioned cybersecurity risks. In addition, while we have, among other things, established enhanced cleaning procedures at our facilities and protocols for responding when our associates are infected, we cannot assure these will be sufficient to mitigate the risks faced by our work force or the liability we may face as a result of any outbreaks of COVID-19.

If the severity and duration of the COVID-19 pandemic does not abate and related containment measures are not lifted, are eased more slowly than anticipated, or are reinstituted, many of the other risks described herein may have a significant impact on our business, financial condition, and results of operations.

General Risk Factors

If our long-lived assets or project related assets become impaired, we may be required to record significant charges to earnings.

We may be required to record significant charges to earnings should we determine that our long-lived assets or project related assets are impaired. Such charges may have a material impact on our financial position and results of operations. We review long-lived and project related assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. We consider a project commercially viable or recoverable if it is anticipated to be sold for a profit once it is either fully developed or fully constructed or if the expected operating cash flows from future power generation exceed the cost basis of the asset. If our projects are not considered commercially viable, we would be required to impair the respective assets.

Our credit agreements contain covenant restrictions that may limit our ability to operate our business.

We may be unable to respond to changes in business and economic conditions, engage in transactions that might otherwise be beneficial to us, and obtain additional financing, if needed, because the senior secured credit facility made available under our amended and restated credit agreement with several financial institutions as lenders and JPMorgan Chase Bank, N.A. as administrative agent (the “Revolving Credit Facility”) and certain of our project financing arrangements contain, and other future debt agreements may contain, covenant restrictions that limit our ability to, among other things:

- incur additional debt, assume obligations in connection with letters of credit, or issue guarantees;
- create liens;
- enter into certain transactions with our affiliates;
- sell certain assets; and
- declare or pay dividends, make other distributions to stockholders, or make other restricted payments.

Under our Revolving Credit Facility and certain of our project financing arrangements, we are also subject to certain financial covenants. Our ability to comply with covenants under our credit agreements is dependent on our future performance or the performance of specifically financed projects, which will be subject to many factors, some of which are beyond our control, including prevailing economic conditions. In addition, our failure to comply with these covenants could result in a default under these agreements and any of our other future debt agreements, which if not cured or waived, could permit the holders thereof to accelerate such debt and could cause cross-defaults under our other facility agreements and the possible acceleration of debt under such agreements, as well as cross-defaults under certain of our key project and operational agreements and could also result in requirements to post additional security instruments to secure future obligations. In addition, certain events that occur within the Company, or in the industry or the economy as a whole, may constitute material adverse effects under these agreements. If it is determined that a material adverse effect has occurred, the lenders can, under certain circumstances, restrict future borrowings or accelerate the due date of outstanding amounts. If any of our debt is accelerated, we may experience cross-defaults under our other debt or operational agreements, which could materially and adversely affect our business, financial condition, and results of operations.

Cyber-attacks or other breaches of our information systems, or those of third parties with which we do business, could have a material adverse effect on our business, financial condition, and results of operations.

Our operations rely on our computer systems, hardware, software, and networks, as well as those of third parties with which we do business, to securely process, store, and transmit proprietary, confidential, and other information, including intellectual property. We also rely heavily on these information systems to operate our manufacturing lines and PV solar power plants. These information systems may be compromised by cyber-attacks, computer viruses, and other events that could be materially disruptive to our business operations and could put the security of our information, and that of the third parties with which we do business, at risk of misappropriation or destruction. In recent years, such cyber incidents have become increasingly frequent and sophisticated, targeting or otherwise affecting a wide range of companies. While we have instituted security measures to minimize the likelihood and impact of a cyber incident, there is no assurance that these measures, or those of the third parties with which we do business, will be adequate in the future. If these measures fail, valuable information may be lost; our manufacturing, development, construction, O&M, and other operations may be disrupted; we may be unable to fulfill our customer obligations; and our reputation may suffer. For example, any cyber incident affecting our automated manufacturing lines could adversely affect our ability to produce solar modules or otherwise affect the quality and performance of the modules produced. We may also be subject to litigation, regulatory action, remedial expenses, and financial losses beyond the scope or limits of our insurance coverage. These consequences of a failure of security measures could, individually or in the aggregate, have a material adverse effect on our business, financial condition, and results of operations.

As a result of the COVID-19 pandemic, the vast majority of our associates who are capable of performing their function remotely are telecommuting, which may exacerbate the aforementioned cybersecurity risks. See the Risk Factor entitled “The COVID-19 pandemic could materially impact our business, financial condition, and results of operations.”

We may not realize the anticipated benefits of past or future business combinations or acquisition transactions, and integration of business combinations may disrupt our business and management.

We have made several acquisitions in prior years and in the future we may acquire additional companies, project pipelines, products, equity interests, or technologies or enter into joint ventures or other strategic initiatives. We may not realize the anticipated benefits of such business combinations or acquisitions, and each transaction has numerous risks, which may include the following:

- difficulty in assimilating the operations and personnel of the acquired or partner company;

- difficulty in effectively integrating the acquired products or technologies with our current products or technologies;
- difficulty in achieving profitable commercial scale from acquired technologies;
- difficulty in maintaining controls, procedures, and policies during the transition and integration;
- disruption of our ongoing business and distraction of our management and associates from other opportunities and challenges due to integration issues;
- difficulty integrating the acquired or partner company's accounting, management information, and other administrative systems;
- difficulty managing joint ventures with our partners, potential litigation with joint venture partners, and reliance upon joint ventures that we do not control;
- inability to retain key technical and managerial personnel of the acquired business;
- inability to retain key customers, vendors, and other business partners of the acquired business;
- inability to achieve the financial and strategic goals for the acquired and combined businesses, as a result of insufficient capital resources or otherwise;
- incurring acquisition-related costs or amortization costs for acquired intangible assets that could impact our operating results;
- potential impairment of our relationships with our associates, customers, partners, distributors, or third-party providers of products or technologies;
- potential failure of the due diligence processes to identify significant issues with product quality, legal and financial liabilities, among other things;
- potential inability to assert that internal controls over financial reporting are effective;
- potential inability to obtain, or obtain in a timely manner, approvals from governmental authorities, which could delay or prevent such acquisitions; and
- potential delay in customer purchasing decisions due to uncertainty about the direction of our product offerings.

Mergers and acquisitions of companies are inherently risky, and ultimately, if we do not complete the integration of acquired businesses successfully and in a timely manner, we may not realize the anticipated benefits of the acquisitions to the extent anticipated, which could adversely affect our business, financial condition, or results of operations. In addition, we may seek to dispose of our interests in acquired companies, project pipelines, products, or technologies. We may not recover our initial investment in such interests, in part or at all, which could adversely affect our business, financial condition, or results of operations.

Our future success depends on our ability to retain our key associates and to successfully integrate them into our management team.

We are dependent on the services of our executive officers and other members of our senior management team. The loss of one or more of these key associates or any other member of our senior management team could have a

material adverse effect on our business. We may not be able to retain or replace these key associates and may not have adequate succession plans in place. Several of our current key associates including our executive officers are subject to employment conditions or arrangements that contain post-employment non-competition provisions. However, these arrangements permit the associates to terminate their employment with us upon little or no notice.

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

Our future success depends, to a significant extent, on our ability to attract, train, and retain management, operations, sales, and technical personnel, including personnel in foreign jurisdictions. Recruiting and retaining capable personnel, particularly those with expertise in the PV solar industry across a variety of technologies, are vital to our success. There is substantial competition for qualified technical personnel, and while we continue to benchmark our organization against the broad spectrum of business in our market space to remain economically competitive, there can be no assurances that we will be able to attract and retain our technical personnel. If we are unable to attract and retain qualified associates, or otherwise experience unexpected labor disruptions within our business, we may be materially and adversely affected.

We may be exposed to infringement or misappropriation claims by third parties, which, if determined adversely to us, could cause us to pay significant damage awards or prohibit us from the manufacture and sale of our solar modules or the use of our technology.

Our success depends largely on our ability to use and develop our technology and know-how without infringing or misappropriating the intellectual property rights of third parties. The validity and scope of claims relating to PV solar technology patents involve complex scientific, legal, and factual considerations and analysis and, therefore, may be highly uncertain. We may be subject to litigation involving claims of patent infringement or violation of intellectual property rights of third parties. The defense and prosecution of 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. An adverse determination in any such litigation or proceedings to which we may become a party could subject us to significant liability to third parties, require us to seek licenses from third parties, which may not be available on reasonable terms, or at all, or pay ongoing royalties, require us to redesign our solar modules, or subject us to injunctions prohibiting the manufacture and sale of our solar modules or the use of our technologies. Protracted litigation could also result in our customers or potential customers deferring or limiting their purchase or use of our solar modules until the resolution of such litigation.

Currency translation and transaction risk may negatively affect our results of operations.

Although our reporting currency is the U.S. dollar, we conduct certain business and incur costs in the local currency of most countries in which we operate. As a result, we are subject to currency translation and transaction risk. For example, certain of our net sales in 2020 were denominated in foreign currencies, such as Japanese yen and Euro, and we expect to continue to have net sales denominated in foreign currencies in the future. Joint ventures or other business arrangements with strategic partners outside the United States have involved, and in the future may involve, significant investments denominated in local currencies. Changes in exchange rates between foreign currencies and the U.S. dollar could affect our results of operations and result in exchange gains or losses. We cannot accurately predict the impact of future exchange rate fluctuations on our results of operations.

We could also expand our business into emerging markets, many of which have an uncertain regulatory environment relating to currency policy. Conducting business in such emerging markets could cause our exposure to changes in exchange rates to increase, due to the relatively high volatility associated with emerging market currencies and potentially longer payment terms for our proceeds.

Our ability to hedge foreign currency exposure is dependent on our credit profile with the banks that are willing and able to do business with us. Deterioration in our credit position or a significant tightening of the credit market

conditions could limit our ability to hedge our foreign currency exposures; and therefore, result in exchange gains or losses.

Unanticipated changes in our tax provision, the enactment of new tax legislation, or exposure to additional income tax liabilities could affect our profitability.

We are subject to income taxes in the jurisdictions in which we operate. In March 2020, the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") was signed into law. The changes included in the CARES Act are broad and complex, and the final effects of the CARES Act may differ from the amounts provided elsewhere in this Annual Report on Form 10-K, possibly materially, due to, among other things, changes in regulations related to the CARES Act, any legislative action to address questions that arise because of the CARES Act, any changes in accounting standards for income taxes or related interpretations in response to the CARES Act, or actions we may take as a result of the CARES Act. Additionally, longstanding international tax laws that determine each country's jurisdictional tax rights in cross-border international trade continue to evolve as a result of the base erosion and profit shifting reporting requirements recommended by the OECD. As these and other tax laws and regulations change, our business, financial condition, and results of operations could be adversely affected.

We are subject to potential tax examinations in various jurisdictions, and taxing authorities may disagree with our interpretations of U.S. and foreign tax laws and may assess additional taxes. We regularly assess the likely outcomes of these examinations in order to determine the appropriateness of our tax provision; however, the outcome of tax examinations cannot be predicted with certainty. Therefore, the amounts ultimately paid upon resolution of such examinations could be materially different from the amounts previously included in our income tax provision, which could have a material impact on our results of operations and cash flows.

In addition, our future effective tax rate could be adversely affected by changes to our operating structure, losses of tax holidays, changes in the jurisdictional mix of earnings among countries with tax holidays or differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in tax laws, and the discovery of new information in the course of our tax return preparation process. Any changes in our effective tax rate may materially and adversely impact our results of operations.

We have been and may be subject to or involved in litigation or threatened litigation, the outcome of which may be difficult to predict, and which may be costly to defend, divert management attention, require us to pay damages, or restrict the operation of our business.

From time to time, we have been and may be subject to disputes and litigation, with and without merit, that may be costly and which may divert the attention of our management and our resources in general, whether or not any dispute actually proceeds to litigation. The results of complex legal proceedings are difficult to predict. Moreover, complaints filed against us may not specify the amount of damages that plaintiffs seek, and we therefore may be unable to estimate the possible range of damages that might be incurred should these lawsuits be resolved against us. Even if we are able to estimate losses related to these actions, the ultimate amount of loss may be materially higher than our estimates. Any resolution of litigation, or threatened litigation, could involve the payment of damages or expenses by us, which may be significant, involve an agreement with terms that restrict the operation of our business, or adversely impact our ability to proceed with the construction or sale of a given project. Even if any future lawsuits are not resolved against us, the costs of defending such lawsuits may be significant. These costs may exceed the dollar limits of our insurance policies or may not be covered at all by our insurance policies. Because the price of our common stock has been, and may continue to be, volatile, we can provide no assurance that additional securities or other litigation will not be filed against us in the future. See Note 13. "Commitments and Contingencies – Legal Proceedings" to our consolidated financial statements for more information on our legal proceedings.

Changes in, or any failure to comply with, privacy laws, regulations, and standards may adversely affect our business.

Personal privacy and data security have become significant issues in the United States, Europe, and in many other jurisdictions in which we operate. The regulatory framework for privacy and security issues worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Furthermore, federal, state, or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws and regulations affecting data privacy, all of which may be subject to invalidation by relevant foreign judicial bodies. Industry organizations also regularly adopt and advocate for new standards in this area.

In the United States, these include rules and regulations promulgated or pending under the authority of federal agencies, state attorneys general, legislatures, and consumer protection agencies. Internationally, many jurisdictions in which we operate have established their own data security and privacy legal framework with which we, relevant suppliers, and customers must comply. For example, the General Data Protection Regulation, a broad-based data privacy regime enacted by the European Parliament, which became effective in May 2018, imposes new requirements on how we collect, process, transfer, and store personal data, and also imposes additional obligations, potential penalties, and risk upon our business. Additionally, the California Consumer Privacy Act, which became effective in January 2020, imposes similar data privacy requirements. In many jurisdictions, enforcement actions and consequences for noncompliance are also rising. In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that either legally or contractually apply to us. Although we have implemented policies, procedures, and, in certain cases, contractual arrangements designed to facilitate compliance with applicable privacy and data security laws and standards, any inability or perceived inability to adequately address privacy and security concerns, even if unfounded, or comply with applicable privacy and data security laws, regulations, and policies, could result in additional fines, costs, and liabilities to us, damage our reputation, inhibit sales, and adversely affect our business.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

As of December 31, 2020, our principal properties consisted of the following:

Nature	Primary Segment(s) Using Property	Location	Held
Corporate headquarters	Modules & Systems	Tempe, Arizona, United States	Lease
Manufacturing plant, R&D facility, and administrative offices (1)	Modules	Perrysburg, Ohio, United States	Own
Administrative offices	Systems	San Francisco, California, United States	Lease
R&D facility	Modules & Systems	Santa Clara, California, United States	Lease
Manufacturing plant and administrative offices	Modules	Kulim, Kedah, Malaysia	Lease land, own buildings
Administrative offices	Modules & Systems	Georgetown, Penang, Malaysia	Lease
Manufacturing plant	Modules	Ho Chi Minh City, Vietnam	Lease land, own buildings
Manufacturing plant (2)	Modules	Frankfurt/Oder, Germany	Own

(1) Includes our manufacturing plant located in Lake Township, Ohio, a short distance from our plant in Perrysburg, Ohio.

(2) In December 2012, we ceased manufacturing at our German plant. Since its closure, we have, from time to time, marketed such property for sale.

Item 3. ***Legal Proceedings***

See Note 13. “Commitments and Contingencies – Legal Proceedings” to our consolidated financial statements for information regarding legal proceedings and related matters.

Item 4. ***Mine Safety Disclosures***

None.

PART II

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

Market Information

Our common stock is listed on The Nasdaq Stock Market LLC under the symbol FSLR.

Holders

As of February 19, 2021, there were 47 record holders of our common stock, which does not reflect beneficial owners of our shares.

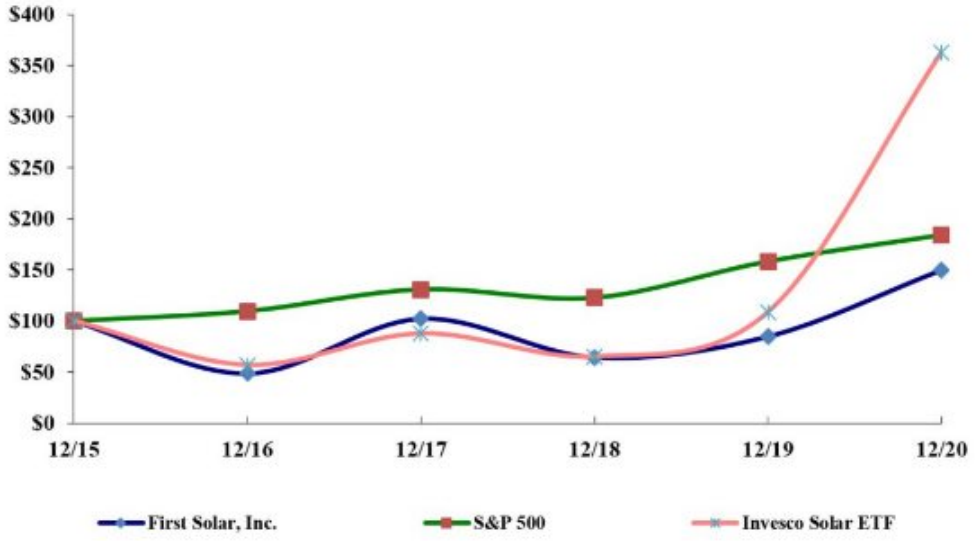
Dividend Policy

We have never paid and do not expect to pay dividends on our common stock for the foreseeable future. Furthermore, our Revolving Credit Facility imposes restrictions on our ability to declare or pay dividends. The declaration and payment of dividends is subject to the discretion of our board of directors and depends on various factors, including our net income, financial condition, cash requirements, and future prospects as well as the restrictions under our Revolving Credit Facility and other factors considered relevant by our board of directors. We expect to prioritize our working capital requirements, capacity expansion and other capital expenditure needs, project development and construction, and merger and acquisition opportunities prior to returning capital to our shareholders.

Stock Price Performance Graph

The following graph compares the five-year cumulative total return on our common stock relative to the cumulative total returns of the S&P 500 Index and the Invesco Solar ETF, which represents a peer group of solar companies. For purposes of the graph, an investment of $100 (with reinvestment of all dividends) is assumed to have been made in our common stock, the S&P 500 Index, and the Invesco Solar ETF on December 31, 2015, and its relative performance is tracked through December 31, 2020. This graph is not “soliciting material,” is not deemed filed with the SEC, and is not to be incorporated by reference in any filing by us under the Securities Act or the Exchange Act, whether made before or after the date hereof, and irrespective of any general incorporation language in any such filing. The stock price performance shown in the graph represents past performance and is not necessarily indicative of future stock price performance.

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN*
Among First Solar, the S&P 500 Index,
and the Invesco Solar ETF



* $100 invested on December 31, 2015 in stock or index, including reinvestment of dividends. Index calculated on a month-end basis.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliate Purchases

None.

Item 6. ***Selected Financial Data***

The following tables set forth our selected financial data for the periods and at the dates indicated. The selected financial data from the consolidated statements of operations and consolidated statements of cash flows for the years ended December 31, 2020, 2019, and 2018 and the selected financial data from the consolidated balance sheets as of December 31, 2020 and 2019 have been derived from the audited consolidated financial statements included in this Annual Report on Form 10-K. The selected financial data from the consolidated statements of operations and consolidated statements of cash flows for the years ended December 31, 2017 and 2016 and the selected financial data from the consolidated balance sheets as of December 31, 2018, 2017, and 2016 have been derived from audited consolidated financial statements not included in this Annual Report on Form 10-K. The information presented below should also be read in conjunction with our consolidated financial statements and the related notes thereto and Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Years Ended December 31,				
	2020	2019	2018	2017	2016
	(In thousands, except per share amounts)				
Net sales	$ 2,711,332	$ 3,063,117	$ 2,244,044	$ 2,941,324	$ 2,904,563
Gross profit	680,673	549,212	392,177	548,947	638,418
Operating income (loss)	317,489	(161,785)	40,113	177,851	(568,151)
Net income (loss)	398,355	(114,933)	144,326	(165,615)	(416,112)
Net income (loss) per share:					
Basic	$ 3.76	$ (1.09)	$ 1.38	$ (1.59)	$ (4.05)
Diluted	$ 3.73	$ (1.09)	$ 1.36	$ (1.59)	$ (4.05)
Cash dividends declared per common share	$ —	$ —	$ —	$ —	$ —
Net cash provided by (used in) operating activities	$ 37,120	$ 174,201	$ (326,809)	$ 1,340,677	$ 206,753
Net cash (used in) provided by investing activities	(131,227)	(362,298)	(682,714)	(626,802)	144,520
Net cash (used in) provided by financing activities	(82,587)	74,943	255,228	192,045	(136,393)

	December 31,				
	2020	2019	2018	2017	2016
	(In thousands)				
Cash and cash equivalents	$ 1,227,002	$ 1,352,741	$ 1,403,562	$ 2,268,534	$ 1,347,155
Marketable securities	520,066	811,506	1,143,704	720,379	607,991
Total assets	7,108,931	7,515,689	7,121,362	6,864,501	6,824,368
Total long-term debt	279,231	471,697	466,791	393,540	188,388
Total liabilities	1,588,003	2,418,922	1,908,959	1,765,804	1,606,019
Total stockholders' equity	5,520,928	5,096,767	5,212,403	5,098,697	5,218,349

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes thereto included in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties, and assumptions as described under the "Note Regarding Forward-Looking Statements" that appears earlier in this Annual Report on Form 10-K. Our actual results could differ materially from those anticipated by these forward-looking statements as a result of many factors, including those discussed under Item 1A. "Risk Factors," and elsewhere in this Annual Report on Form 10-K. This discussion and analysis does not address certain items in respect of the year ended December 31, 2018 in reliance on amendments to disclosure requirements adopted by the SEC in 2019. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2019 for comparative discussions of our results of operations and liquidity and capital resources for the years ended December 31, 2019 and 2018.

Executive Overview

We are a leading global provider of PV solar energy solutions. We design, manufacture, and sell PV solar modules with an advanced thin film semiconductor technology and also develop and sell PV solar power systems that primarily use the modules we manufacture. Additionally, in certain markets we provide O&M services to system owners. We have substantial, ongoing R&D efforts focused on various technology innovations. We are the world's largest thin film PV solar module manufacturer and one of the world's largest PV solar module manufacturers.

Certain of our financial results and other key operational developments for the year ended December 31, 2020 include the following:

- Net sales for 2020 decreased by 11% to $2.7 billion compared to $3.1 billion in 2019. The decrease in net sales was primarily attributable to the completion of substantially all construction activities at the Sun Streams, Phoebe, Sunshine Valley, Rosamond, Seabrook, and Lake Hancock projects in 2019, the sale of the Beryl and Little Bear projects in 2019, and lower construction activities at the GA Solar 4 project in the current period, partially offset by the sale of the Ishikawa, American Kings, Miyagi, Anamizu, Tungabhadra, and Anantapur projects in 2020 and an increase in the volume of modules sold to third parties.

- Gross profit increased 7.2 percentage points to 25.1% during 2020 from 17.9% during 2019 primarily due to higher gross profit on third-party module sales and improved throughput of our manufacturing facilities from the successful ramp of various Series 6 manufacturing lines, partially offset by the higher benefit from reductions to our product warranty liability in the prior period and an impairment loss for certain module manufacturing equipment.

- During late 2020, we completed the capacity expansion of our manufacturing facility in Perrysburg, Ohio. As of December 31, 2020 we had 6.3 GW_{DC} of total installed Series 6 nameplate production capacity across all our facilities. We produced 6.1 GW_{DC} of solar modules during 2020, which represented a 59% increase in Series 6 module production from 2019. The increase in Series 6 production was primarily driven by the production capacity added in 2019 at our second facility in Ho Chi Minh City, Vietnam and our facility in Lake Township, Ohio as well as higher throughput at various facilities. We expect to produce between 7.4 GW_{DC} and 7.6 GW_{DC} of Series 6 modules during 2021.

- In response to the COVID-19 pandemic, governmental authorities have recommended or ordered the limitation or cessation of certain business or commercial activities in jurisdictions in which we operate, including the United States, Malaysia, and Vietnam. At this time, such limitations have had limited effect on our Series 6 manufacturing facilities. However, these orders are subject to continuous revision, and our

understanding of the applicability of these orders and any potential exemptions may change at any time. To enable the continuity of our operations, we have implemented a wide range of safety measures intended to inhibit the spread of COVID-19 at our manufacturing, administrative, and other sites and facilities.

- Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

- Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our U.S. project development business, we have determined it is in the best interest of our stockholders to pursue the sale of this business. On January 24, 2021, we entered into an agreement with OMERS for the sale of our U.S. project development operations, which comprises the business of developing, contracting for the construction of, and selling utility-scale PV solar power systems. The transaction includes our approximately 10 GW_{AC} utility-scale solar project pipeline, including the advanced-stage Horizon, Madison, Ridgely, Rabbitbrush, and Oak Trail projects that are expected to commence construction in the next two years; the 30 MW_{AC} Barilla Solar project, which is operational; and certain other equipment. In addition, OMERS has agreed to certain module purchase commitments. The completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from FERC, the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by CFIUS, and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

- In January 2020, we entered into a Memorandum of Understanding ("MOU") to settle a class action lawsuit filed in 2012 in the United States District Court for the District of Arizona (hereafter "Arizona District Court") against the Company and certain of our current and former officers and directors (the "Class Action"). Pursuant to the MOU, we paid a total of $350 million to settle the claims brought on behalf of all persons who purchased or otherwise acquired the Company's shares during a specified period, in exchange for mutual releases and a dismissal with prejudice of the complaint upon court approval of the settlement. The settlement contained no admission of liability, wrongdoing, or responsibility by any of the parties. The Arizona District Court entered an order in June 2020 that granted final approval of the settlement and dismissed the Class Action with prejudice.

- In June 2020, we entered into an agreement in principle to settle certain claims filed in 2015 in the Arizona District Court by putative stockholders that opted out of the Class Action (the "Opt-Out Action"). In July 2020, the parties executed a definitive settlement agreement pursuant to which we agreed to pay a total of $19 million in exchange for mutual releases and a dismissal with prejudice of the Opt-Out Action. The agreement contained no admission of liability, wrongdoing, or responsibility by any of the parties. In July 2020, First Solar funded the settlement and the parties filed a joint stipulation of dismissal. In September 2020, the Arizona District Court entered an order dismissing the case with prejudice.

Market Overview

The solar industry continues to be characterized by intense pricing competition, both at the module and system levels. In particular, module average selling prices in many global markets have declined in recent years and are expected to continue to decline in the future. Furthermore, the COVID-19 pandemic has adversely affected certain purchasers of modules and systems, which may result in additional pressure on demand and average selling prices. In the aggregate, we believe manufacturers of solar cells and modules have significant installed production capacity, relative to global demand, and the ability for additional capacity expansion. Accordingly, we believe the solar

industry may from time to time experience periods of structural imbalance between supply and demand (i.e., where production capacity exceeds global demand), and that such periods will also put pressure on pricing, which may be exacerbated by the COVID-19 pandemic's disruption of the global economy. Additionally, intense competition at the system level may result in an environment in which pricing falls rapidly, thereby potentially increasing demand for solar energy solutions but constraining the ability for project developers and diversified module manufacturers to sustain meaningful and consistent profitability. In light of such market realities, we continue to focus on our strategies and points of differentiation, which include our advanced module technology, our manufacturing process, our diversified capabilities, our financial viability, and the sustainability advantage of our modules and systems.

Global solar markets continue to expand and develop, in part aided by demand elasticity resulting from declining average selling prices, both at the module and system levels, which have promoted the widespread adoption of solar energy. As a result of such market opportunities, we are expanding our manufacturing capacity and developing solar projects in certain markets as we execute on our utility-scale project pipeline. See the tables under "Management's Discussion and Analysis of Financial Condition and Results of Operations – Systems Project Pipeline" for additional information about projects within our advanced-stage pipeline. Although we expect a meaningful portion of our future consolidated net sales, operating income, and cash flows to be derived from such projects, we expect third-party module sales to continue to have a more significant impact on our operating results as we expand capacity and leverage the benefits of our Series 6 module technology.

Lower industry module and system pricing is expected to contribute to diversification in global electricity generation and further demand for solar energy. Over time, however, declining average selling prices may adversely affect our results of operations to the extent we have not already entered into contracts for future module or system sales. Our results of operations could also be adversely affected if competitors reduce pricing to levels below their costs, bid aggressively low prices for module sale agreements or PPAs, or are able to operate at minimal or negative operating margins for sustained periods of time. For certain of our competitors, such actions may be enabled by their direct or indirect access to sovereign capital or other forms of state-owned support. In certain markets in California and elsewhere, an oversupply imbalance at the grid level may reduce short-to-medium term demand for new solar installations relative to prior years, lower PPA pricing, and lower margins on module and system sales to such markets. However, we believe the effects of such imbalance can be mitigated by modern solar power plants and energy storage solutions that offer a flexible operating profile, thereby promoting greater grid stability and enabling a higher penetration of solar energy. We continue to address these uncertainties, in part, by executing on our module technology improvements, partnering with grid operators and utility companies, and implementing certain other cost reduction initiatives.

We face intense competition from manufacturers of crystalline silicon solar modules and developers of solar power projects. Solar module manufacturers compete with one another on price and on several module value attributes, including wattage (through a larger form factor or an improved conversion efficiency), energy yield, and reliability, and developers of systems compete on various factors such as net present value, return on equity, and LCOE. Many crystalline silicon cell and wafer manufacturers have transitioned from lower efficiency BSF multi-crystalline cells (the legacy technology against which we have generally competed) to higher efficiency PERC mono-crystalline cells at competitive cost structures. Additionally, while conventional solar modules, including the solar modules we produce, are monofacial, meaning their ability to produce energy is a function of direct and diffuse irradiance on their front side, certain manufacturers of mono-crystalline PERC modules offer bifacial modules that also capture diffuse irradiance on the back side of a module. The cost effective manufacture of bifacial PERC modules has been enabled, in part, by the expansion of inexpensive crystal growth and diamond wire saw capacity in China. Bifaciality compromises nameplate efficiency, but by converting both front and rear side irradiance, such technology may improve the overall energy production of a module relative to nameplate efficiency when applied in certain applications, which, after considering the incremental BoS and other costs, could potentially lower the overall LCOE of a system when compared to systems using conventional solar modules, including the modules we produce.

We believe we are among the lowest cost module manufacturers in the solar industry on a module cost per watt basis, based on publicly available information. This cost competitiveness allows us to compete favorably in markets

where pricing for modules and systems is highly competitive. Our cost competitiveness is based in large part on our advanced thin-film semiconductor technology, module wattage (or conversion efficiency), proprietary manufacturing process (which enables us to produce a CdTe module in a matter of hours using a continuous and highly automated industrial manufacturing process, as opposed to a batch process), and our focus on operational excellence. In addition, our CdTe modules use approximately 1-2% of the amount of semiconductor material that is used to manufacture conventional crystalline silicon solar modules. The cost of polysilicon is a significant driver of the manufacturing cost of crystalline silicon solar modules, and the timing and rate of change in the cost of silicon feedstock and polysilicon could lead to changes in solar module pricing levels. In recent years, polysilicon consumption per cell has been reduced through various initiatives, such as the adoption of diamond wire saw technology, which have contributed to declines in our relative manufacturing cost competitiveness over conventional crystalline silicon module manufacturers.

In terms of energy yield, in many climates our CdTe solar modules provide an energy production advantage over crystalline silicon solar modules of equivalent efficiency rating. For example, our CdTe solar modules provide a superior temperature coefficient, which results in stronger system performance in typical high insolation climates as the majority of a system's generation, on average, occurs when module temperatures are well above 25°C (standard test conditions). In addition, our CdTe solar modules provide a superior spectral response in humid environments where atmospheric moisture alters the solar spectrum relative to laboratory standards. Our CdTe solar modules also provide a better partial shading response than conventional crystalline silicon solar modules, which may experience significantly lower energy generation than CdTe solar modules when partial shading occurs. As a result of these and other factors, our PV solar modules typically produce more annual energy in real world field conditions than conventional modules with the same nameplate capacity. Furthermore, our thin-film CdTe semiconductor technology is immune to cell cracking and its resulting power output loss, a common failure often observed in crystalline silicon modules caused by poor manufacturing, handling, weather, or other conditions.

While our modules and systems are generally competitive in cost, reliability, and performance attributes, there can be no guarantee such competitiveness will continue to exist in the future to the same extent or at all. Any declines in the competitiveness of our products could result in further declines in the average selling prices of our modules and systems and additional margin compression. We continue to focus on enhancing the competitiveness of our solar modules and systems by accelerating progress along our module technology and cost reduction roadmaps.

Certain Trends and Uncertainties

We believe that our business, financial condition, and results of operations may be favorably or unfavorably impacted by the following trends and uncertainties. See Item 1A. "Risk Factors" and elsewhere in this Annual Report on Form 10-K for discussions of other risks that may affect us.

Our long-term strategic plans are focused on our goal to create long-term shareholder value through a balance of growth, profitability, and liquidity. In executing such plans, we are focusing on providing utility-scale PV solar energy solutions in key geographic markets that we believe have a compelling need for mass-scale PV solar electricity, including markets throughout the United States, Japan, Europe, India, and certain other strategic markets. While these markets are expected to exhibit strong long-term demand for solar energy, the economic disruption caused by the COVID-19 pandemic has adversely affected near-term demand for electricity at the grid level. As a result, such temporary decline in load may adversely affect demand for specific forms of generation, such as our PV solar energy solutions, depending on the severity and duration of the economic disruption. Given these market dynamics, we continue to focus on opportunities in which our PV solar energy solutions compete directly with traditional forms of energy generation on an LCOE or similar basis, or complement such generation offerings. These opportunities include the retirement and replacement of aging fossil fuel-based generation resources with utility-scale PV solar energy solutions. For example, cumulative global retirements of coal generation plants are expected to approximate 900 GW_{DC} by 2040, representing a significant increase in the potential market for solar energy.

This focus on our core module and utility-scale offerings exists within a current market environment that includes rooftop and distributed generation solar, particularly in the United States. While it is unclear how rooftop and distributed generation solar might impact our core utility-scale based offerings over the next several years, we believe that utility-scale solar will continue to be a compelling offering for companies with technology and cost leadership and will continue to represent an increasing portion of the overall electricity generation mix. However, our module offerings in certain international markets may be driven, in part, by future demand for rooftop and distributed generation solar solutions.

Our ability to provide utility-scale offerings on economically attractive terms depends, in part, on market factors outside our control, such as the availability of debt and/or equity financing (including, in the United States, tax equity financing), interest rate fluctuations, domestic or international trade policies, and government support programs. Adverse changes in these factors could increase the cost of utility-scale systems, which could reduce demand for such systems and limit the number of potential buyers. For example, we generally sell projects we have developed within our systems business to purchasers that depend on financing to fund the initial capital expenditures required to develop, build, and/or purchase a system. Although governments and central banks around the world have implemented significant measures to support capital markets, the economic disruption caused by the COVID-19 pandemic may result in a long-term tightening of the supply of capital in global financial markets (including, in the United States, a reduction in total tax equity availability). A reduction in the supply of project debt or equity financing (including, in the United States, tax equity financing) caused by the COVID-19 pandemic could make it difficult for our customers to secure the financing necessary to develop, build, purchase, or install systems. Similarly, purchasers of modules may cease or significantly reduce business operations, cease or delay module procurement, encounter an inability to obtain financing, including due to a reduction in the supply of project debt financing or equity investments (including, in the United States, tax equity financing), conserve capital resources, or take other actions in response to the COVID-19 pandemic, which may reduce demand and average selling prices for our modules.

In certain markets, demand for our utility-scale offerings may be affected by specific regulations or policies of governmental bodies or utility regulators. For example, in June 2020, the Japanese legislature enacted an amendment to the Electricity Business Law Enforcement Order for the Ministry of Economy, Trade and Industry of Japan which, among other things, is expected to invalidate the feed-in-tariff certificates for projects that fail to achieve construction plan acceptance, submit an interconnection application, and/or achieve commercial operation within a set period of time following dates specified in their respective certificates. The amendment, which becomes effective in April 2022, applies to all projects regardless of generation type and is intended to release grid capacity reserved for delayed projects to enable other newly developed projects to utilize such capacity at a lower cost of electricity to consumers. The deadline by which a project must achieve construction plan acceptance, submit an interconnection application, and/or achieve commercial operation varies by project, but is no earlier than March 2023. Any deadlines that precede the expected construction plan acceptance and/or commercial operation dates of our various projects in Japan could adversely affect the value of such projects and our ability to secure any related project financing.

We intend to focus our resources in those markets and energy applications in which solar power can be a least-cost, best-fit energy solution, particularly in regions with significant current or projected electricity demand, relatively high existing electricity prices, strong demand for renewable energy generation, and high solar resources. As a result, we closely evaluate and monitor the appropriate level of resources required to support such markets and their associated sales opportunities. We have dedicated, and intend to continue to dedicate, significant capital and human resources to reduce the total installed cost of PV solar energy and to ensure that our solutions integrate well into the overall electricity ecosystem of each specific market.

Creating or maintaining a market position in certain strategically targeted markets and energy applications also requires us to adapt to new and changing market conditions, including changes in the market set of potential buyers of our modules and solar projects. Market environments with few potential project buyers and a higher cost of capital would generally exert downward pressure on the potential revenue from such offerings, whereas, conversely, market environments with many potential project buyers and a lower cost of capital would likely have a favorable

impact on the potential revenue from such offerings. For example, the emergence of utility-owned generation has increased the number of potential project buyers as such utility customers benefit from a potentially low cost of capital available through rate-based utility investments. Given their long-term ownership profile, utility-owned generation customers typically seek to partner with diversified and stable companies that can provide a broad spectrum of utility-scale generation solutions, including reliable PV solar technology, thereby mitigating their long-term ownership risks.

On occasion, we may elect to develop partially contracted or uncontracted systems for which there is a partial or no PPA with an off-taker, such as a utility, but rather an intent to sell some portion of the electricity produced by the system on an open contract basis until the system is sold. Expected revenue from projects without a PPA for the full off-take of the system is subject to greater variability and uncertainty based on market factors and is typically lower than projects with a PPA for the full off-take of the system. Furthermore, all system pricing is affected by the pricing of energy to be sold on an open contract basis following the termination of the PPA (i.e., merchant pricing curves), and changes in market assumptions regarding future open contract sales, including potential changes in energy demand caused by the COVID-19 pandemic, may also result in significant variability and uncertainty in the value of our systems projects.

We continually evaluate forecasted global demand, competition, and our addressable market and seek to effectively balance manufacturing capacity with market demand and the nature and extent of our competition. We continue to increase the nameplate production capacity of our existing manufacturing facilities by improving our production throughput, increasing module wattage (or conversion efficiency), and improving manufacturing yield losses. As we evaluate the potential for future capacity expansion, we may also seek to further diversify our manufacturing presence, although we have made no decisions to do so at this time. Such additional capacity, and any other potential investments to add or otherwise modify our existing manufacturing capacity in response to market demand and competition, may require significant internal and possibly external sources of capital, and may be subject to certain risks and uncertainties described in Item 1A. “Risk Factors,” including those described under the headings “Our future success depends on our ability to effectively balance manufacturing production with market demand, convert existing production facilities to support new product lines, decrease our cost per watt, and, when necessary, continue to build new manufacturing plants over time in response to market demand, all of which are subject to risks and uncertainties” and “If any future production lines are not built in line with committed schedules, it may adversely affect our future growth plans. If any future production lines do not achieve operating metrics similar to our existing production lines, our solar modules could perform below expectations and cause us to lose customers.”

In response to the COVID-19 pandemic, governmental authorities have recommended or ordered the limitation or cessation of certain business or commercial activities in jurisdictions in which we do business or have operations. While some of these orders permit the continuation of essential business operations, or permit the performance of minimum business activities, these orders are subject to continuous revision or may be revoked or superseded, or our understanding of the applicability of these orders and exemptions may change at any time. In addition, due to contraction of the virus, or concerns about becoming ill from the virus, we may experience reductions in the availability of our operational workforce, such as our manufacturing personnel. As a result, we may at any time be ordered by governmental authorities, or we may determine, based on our understanding of the recommendations or orders of governmental authorities or the availability of our personnel, that we have to curtail or cease business operations or activities altogether, including manufacturing, fulfillment, project development, construction, operating or maintenance operations, or research and development activities. At this time, such limitations have had a limited effect on our manufacturing facilities and certain project construction activities, and we have implemented a wide range of safety measures intended to enable the continuity of our operations and inhibit the spread of COVID-19 at our manufacturing, administrative, and other sites and facilities, including those in the United States, Malaysia, and Vietnam.

To address the near-term business disruption caused by the COVID-19 pandemic, many governments have proposed policies or support programs intended to stimulate their respective economies. Such support programs may include additional incentives for renewable energy projects, including PV solar power systems, over several years. While we

compete in many markets that do not require solar-specific government subsidies or support programs, our net sales and profits remain subject to variability based on the availability and size of government subsidies and economic incentives.

Systems Project Pipeline

The following tables summarize, as of February 25, 2021, our approximately 1.3 GW_{AC} advanced-stage project pipeline. The actual volume of modules installed in our projects will be greater than the project size in MW_{AC} as module volumes required for a project are based upon MW_{DC}, which will be greater than the MW_{AC} size pursuant to a DC-AC ratio typically ranging from 1.1 to 1.4. Such ratio varies across different projects due to many factors, including PPA pricing and the location, design, and costs of the system. Projects are typically removed from our advanced-stage project pipeline tables below once we substantially complete construction of the project and after substantially all of the associated project revenue is recognized. A project, or a portion of a project, may also be removed from the tables below in the event the project is not able to be sold due to the changing economics of the project or other factors or we decide to temporarily own and operate the project based on strategic opportunities or market factors.

Projects under Sales Agreements

The following table includes uncompleted sold projects and projects under contracts subject to conditions precedent:

Project/Location	Project Size in MW_{AC}	PPA Contracted Partner	Customer	Expected Year Revenue Recognition Will Be Completed	% of Revenue Recognized as of December 31, 2020
Horizon, Texas	200	(2)	(4)	(4)	(4)
Madison, Ohio (1)	196	Verizon Communications	(4)	(4)	(4)
Ridgely, Tennessee	177	Tennessee Valley Authority	(4)	(4)	(4)
Sun Streams 2, Arizona	150	Microsoft Corporation	(5)	2021 (5)	—%
Rabbitbrush, California	100	(3)	(4)	(4)	(4)
Oak Trail, North Carolina	100	Verizon Communications	(4)	(4)	(4)
Total	923				

Projects with Confirmed Offtake Agreements Not under Sales Agreements

Project/Location	Project Size in MW_{AC}	PPA Contracted Partner	Primary Permits Obtained	Expected or Actual Substantial Completion Year	% Complete as of December 31, 2020
Luz del Norte, Chile	141	(6)	Yes	2016	100%
Sun Streams PVS, Arizona	65	(7)	Yes	2022	8%
Kyoto, Japan	38	Chubu Electric Power Company	Yes	2022	33%
Japan (multiple locations)	160	(8)	Yes	2021/2023	22%
Total	404				

(1) Previously known as the Big Plain Solar project

(2) 150 MW_{AC} of the plant's capacity is contracted with Dow Pipeline Company; remaining capacity to be sold on an open contract basis

(3) Central Coast Community Energy – 60 MW_{AC} and Silicon Valley Clean Energy – 40 MW_{AC}

(4) Project included in the sale of our U.S. project development business. Refer to Item 1. “Business – Offerings and Capabilities” for further information.

(5) Contracted but not specified. Project sale completed in February 2021.

(6) Approximately 70 MW_{AC} of the plant’s capacity is contracted under various PPAs; remaining capacity to be sold on an open contract basis

(7) The project’s PPA was terminated in February 2021. We continue to market the project for sale.

(8) 11 MW_{AC} has been contracted with Tokyo Electric Power Company. The remaining 149 MW_{AC} has secured feed-in-tariff rights, and the related PPAs for such projects will be executed at a later date.

Results of Operations

The following table sets forth our consolidated statements of operations as a percentage of net sales for the years ended December 31, 2020, 2019, and 2018:

	Years Ended December 31,		
	2020	**2019**	**2018**
Net sales	100.0 %	100.0 %	100.0 %
Cost of sales	74.9 %	82.1 %	82.5 %
Gross profit	25.1 %	17.9 %	17.5 %
Selling, general and administrative	8.2 %	6.7 %	7.9 %
Research and development	3.5 %	3.2 %	3.8 %
Production start-up	1.5 %	1.5 %	4.0 %
Litigation loss	0.2 %	11.9 %	— %
Operating income (loss)	11.7 %	(5.3)%	1.8 %
Foreign currency (loss) income, net	(0.2)%	0.1 %	— %
Interest income	0.6 %	1.6 %	2.7 %
Interest expense, net	(0.9)%	(0.9)%	(1.2)%
Other (expense) income, net	(0.4)%	0.6 %	1.8 %
Income tax benefit (expense)	4.0 %	0.2 %	(0.2)%
Equity in earnings, net of tax	(0.1)%	— %	1.5 %
Net income (loss)	14.7 %	(3.8)%	6.4 %

Segment Overview

We operate our business in two segments. Our modules segment involves the design, manufacture, and sale of CdTe solar modules to third parties, and our systems segment includes the development, construction contracting and management, operation, maintenance, and sale of PV solar power systems, including any modules installed in such systems and any revenue from energy generated by such systems.

Net sales

Modules Business

We generally price and sell our solar modules on a per watt basis. During 2020, Longroad Energy, NextEra Energy, and Softbank each accounted for more than 10% of our modules business net sales, and the majority of our solar modules were sold to integrators and operators of systems in the United States and France. Substantially all of our modules business net sales during 2020 were denominated in U.S. dollars and Euro. We recognize revenue for module sales at a point in time following the transfer of control of the modules to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts. The revenue recognition

policies for module sales are further described in Note 2. “Summary of Significant Accounting Policies” to our consolidated financial statements.

Systems Business

During 2020, Goldman Sachs Renewable Power, SMFL Mirai Partners, and Mitsui & Co. each accounted for more than 10% of our systems business net sales, and the majority of our systems business net sales were in the United States and Japan. Substantially all of our systems business net sales during 2020 were denominated in U.S. dollars and Japanese yen. We recognize revenue for sales of solar power systems using cost based input methods, which result in revenue being recognized as work is performed based on the relationship between actual costs incurred compared to the total estimated costs for a given contract. We may also recognize revenue for the sale of a development project, which excludes EPC services, or for the sale of a completed system when we enter into the associated sales contract with the customer. The revenue recognition policies for our systems business are further described in Note 2. “Summary of Significant Accounting Policies” to our consolidated financial statements.

The following table shows net sales by reportable segment for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Modules	$ 1,736,060	$ 1,460,116	$ 502,001	$ 275,944	19 %	$ 958,115	191 %
Systems	975,272	1,603,001	1,742,043	(627,729)	(39)%	(139,042)	(8)%
Net sales	$ 2,711,332	$ 3,063,117	$ 2,244,044	$ (351,785)	(11)%	$ 819,073	36 %

Net sales from our modules segment increased by $275.9 million in 2020 primarily due to a 21% increase in the volume of watts sold, partially offset by a 2% decrease in the average selling price per watt. Net sales from our systems segment decreased by $627.7 million in 2020 primarily due to the completion of substantially all construction activities at the Sun Streams, Phoebe, Sunshine Valley, Rosamond, Seabrook, and Lake Hancock projects in 2019, the sale of the Beryl and Little Bear projects in 2019, and lower construction activities at the GA Solar 4 project in the current period, partially offset by the sale of the Ishikawa, American Kings, Miyagi, Anamizu, Tungabhadra, and Anantapur projects in 2020.

Cost of sales

Modules Business

Our modules business cost of sales includes the cost of raw materials and components for manufacturing solar modules, such as glass, transparent conductive coatings, CdTe and other thin film semiconductors, laminate materials, connector assemblies, edge seal materials, and frames. In addition, our cost of sales includes direct labor for the manufacturing of solar modules and manufacturing overhead, such as engineering, equipment maintenance, quality and production control, and information technology. Our cost of sales also includes depreciation of manufacturing plant and equipment, facility-related expenses, environmental health and safety costs, and costs associated with shipping, warranties, and solar module collection and recycling (excluding accretion).

Systems Business

For our systems business, project-related costs include development costs (legal, consulting, transmission upgrade, interconnection, permitting, and other similar costs), EPC costs (consisting primarily of solar modules, inverters, electrical and mounting hardware, project management and engineering, and construction labor), and site specific costs.

The following table shows cost of sales by reportable segment for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Modules	$ 1,306,929	$ 1,170,037	$ 552,468	$ 136,892	12 %	$ 617,569	112 %
Systems	723,730	1,343,868	1,299,399	(620,138)	(46)%	44,469	3 %
Cost of sales	$ 2,030,659	$ 2,513,905	$ 1,851,867	$ (483,246)	(19)%	$ 662,038	36 %
% of net sales	74.9 %	82.1 %	82.5 %				

Cost of sales decreased $483.2 million, or 19%, and decreased 7.2 percentage points as a percent of net sales when comparing 2020 with 2019. The decrease in cost of sales was driven by a $620.1 million decrease in our systems segment cost of sales primarily due to the lower volume of projects under construction during the period. Such decrease in our systems segment cost of sales was partially offset by a $136.9 million increase in our modules segment cost of sales primarily as a result of the following:

- higher costs of $247.4 million from an increase in the volume of modules sold;
- an impairment loss of $17.4 million for certain module manufacturing equipment, including framing and assembly tools, which were no longer compatible with our long-term module technology roadmap;
- manufacturing related charges of $15.1 million associated with the ongoing COVID-19 pandemic; and
- a reduction to our product warranty liability of $80.0 million in 2019 due to revised module return rates; partially offset by
- a reduction to our product warranty liability of $19.7 million in 2020 due to lower-than-expected settlements for our older series of module technology and revisions to projected settlements;
- lower under-utilization and certain other charges associated with the initial ramp of certain Series 6 manufacturing lines, which decreased cost of sales by $61.7 million compared to 2019;
- a reduction in our module collection and recycling liability of $18.9 million primarily due to changes to the estimated timing of cash flows associated with capital, labor, and maintenance costs and updates to certain valuation assumptions; and
- continued module cost reductions, which decreased cost of sales by $157.2 million.

Gross profit

Gross profit may be affected by numerous factors, including the selling prices of our modules and systems, our manufacturing costs, project development costs, BoS costs, the capacity utilization of our manufacturing facilities, and foreign exchange rates. Gross profit may also be affected by the mix of net sales from our modules and systems businesses.

The following table shows gross profit for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Gross profit	$ 680,673	$ 549,212	$ 392,177	$ 131,461	24 %	$ 157,035	40 %
% of net sales	25.1 %	17.9 %	17.5 %				

Gross profit increased 7.2 percentage points to 25.1% during 2020 from 17.9% during 2019 primarily due to higher gross profit on third-party module sales and improved throughput of our manufacturing facilities from the successful ramp of various Series 6 manufacturing lines, partially offset by the lower benefit from reductions to our product warranty liability and the impairment loss for certain module manufacturing equipment described above.

Selling, general and administrative

Selling, general and administrative expense consists primarily of salaries and other personnel-related costs, professional fees, insurance costs, and other business development and selling expenses.

The following table shows selling, general and administrative expense for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Selling, general and administrative	$ 222,918	$ 205,471	$ 176,857	$ 17,447	8 %	$ 28,614	16 %
% of net sales	8.2 %	6.7 %	7.9 %				

Selling, general and administrative expense in 2020 increased compared to 2019 primarily due to higher charges for impairments of certain project assets and an increase in professional fees, partially offset by lower project development and travel expenses.

Research and development

Research and development expense consists primarily of salaries and other personnel-related costs; the cost of products, materials, and outside services used in our R&D activities; and depreciation and amortization expense associated with R&D specific facilities and equipment. We maintain a number of programs and activities to improve our technology and processes in order to enhance the performance and reduce the costs of our solar modules.

The following table shows research and development expense for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Research and development	$ 93,738	$ 96,611	$ 84,472	$ (2,873)	(3)%	$ 12,139	14 %
% of net sales	3.5 %	3.2 %	3.8 %				

Research and development expense in 2020 decreased compared to 2019 primarily as a result of lower employee compensation expense due to reductions in R&D headcount for our systems business, partially offset by increased material and module testing costs.

Production start-up

Production start-up expense consists primarily of employee compensation and other costs associated with operating a production line before it is qualified for full production, including the cost of raw materials for solar modules run through the production line during the qualification phase and applicable facility related costs. Costs related to equipment upgrades and implementation of manufacturing process improvements are also included in production start-up expense as well as costs related to the selection of a new site, related legal and regulatory costs, and costs to maintain our plant replication program to the extent we cannot capitalize these expenditures. In general, we expect production start-up expense per production line to be higher when we build an entirely new manufacturing facility compared with the addition or replacement of production lines at an existing manufacturing facility, primarily due to the additional infrastructure investment required when building an entirely new facility.

The following table shows production start-up expense for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Production start-up	$ 40,528	$ 45,915	$ 90,735	$ (5,387)	(12)%	$ (44,820)	(49)%
% of net sales	1.5 %	1.5 %	4.0 %				

During 2020, we incurred production start-up expense for the transition to Series 6 module manufacturing at our second facility in Kulim, Malaysia and the capacity expansion of our manufacturing facility in Perrysburg, Ohio. During 2019, we incurred production start-up expense at our new facility in Lake Township, Ohio and our second facility in Ho Chi Minh City, Vietnam, which commenced commercial production in early 2019.

Litigation loss

The following table shows litigation loss for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Litigation loss	$ 6,000	$ 363,000	$ —	$ (357,000)	(98)%	$ 363,000	100 %
% of net sales	0.2 %	11.9 %	— %				

In January 2020, we entered into an MOU to settle a class action lawsuit filed in 2012 in the Arizona District Court against the Company and certain of our current and former officers and directors. Pursuant to the MOU, we agreed to pay a total of $350 million to settle the claims brought on behalf of all persons who purchased or otherwise acquired the Company's shares during a specified period, in exchange for mutual releases and a dismissal with prejudice of the complaint upon court approval of the settlement. The settlement contains no admission of liability, wrongdoing, or responsibility by any of the parties. As a result of the entry into the MOU, we accrued a loss for the above-referenced settlement in 2019, and paid the $350 million settlement in January 2020. In June 2020, the Arizona District Court entered an order that granted final approval of the settlement and dismissed the Class Action with prejudice.

In June 2020, we entered into an agreement in principle to settle the claims in the Opt-Out Action filed in 2015 in the Arizona District Court by putative stockholders that opted out of the Class Action. In July 2020, the parties executed a definitive settlement agreement pursuant to which we agreed to pay a total of $19 million in exchange for mutual releases and a dismissal with prejudice of the Opt-Out Action. The agreement contains no admission of liability, wrongdoing, or responsibility by any of the parties. In July 2020, First Solar funded the settlement and the parties filed a joint stipulation of dismissal. In September 2020, the Arizona District Court entered an order dismissing the case with prejudice. As of December 31, 2019, we had accrued $13 million of estimated losses for this action. As a result of the settlement, we accrued an incremental $6 million litigation loss during 2020.

See Note 13. "Commitments and Contingencies" to our consolidated financial statements for additional information on these matters.

Foreign currency (loss) income, net

Foreign currency (loss) income, net consists of the net effect of gains and losses resulting from holding assets and liabilities and conducting transactions denominated in currencies other than our subsidiaries' functional currencies.

The following table shows foreign currency (loss) income, net for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Foreign currency (loss) income, net	$ (4,890)	$ 2,291	$ (570)	$ (7,181)	313 %	$ 2,861	502 %

Foreign currency loss increased in 2020 compared to 2019 primarily due to higher costs associated with hedging activities related to our subsidiaries in Japan and Europe and differences between our economic hedge positions and the underlying exposures.

Interest income

Interest income is earned on our cash, cash equivalents, marketable securities, restricted cash, and restricted marketable securities. Interest income also includes interest earned from notes receivable and late customer payments.

The following table shows interest income for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Interest income	$ 16,559	$ 48,886	$ 59,788	$ (32,327)	(66)%	$ (10,902)	(18)%

Interest income during 2020 decreased compared to 2019 primarily due to lower interest rates on cash and cash equivalents and lower average balances and interest rates associated with time deposits and marketable securities.

Interest expense, net

Interest expense, net is primarily comprised of interest incurred on long-term debt, settlements of interest rate swap contracts, and changes in the fair value of interest rate swap contracts that do not qualify for hedge accounting in accordance with Accounting Standards Codification ("ASC") 815. We may capitalize interest expense to our project assets or property, plant and equipment when such costs qualify for interest capitalization, which reduces the amount of net interest expense reported in any given period.

The following table shows interest expense, net for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Interest expense, net	$ (24,036)	$ (27,066)	$ (25,921)	$ 3,030	(11)%	$ (1,145)	4 %

Interest expense, net in 2020 decreased compared to 2019 primarily due to lower interest expense associated with project debt, partially offset by higher amortization of debt discounts and issuance costs and a decrease in capitalized interest.

Other (expense) income, net

Other (expense) income, net is primarily comprised of miscellaneous items and realized gains and losses on the sale of marketable securities and restricted marketable securities.

The following table shows other (expense) income, net for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Other (expense) income, net	$ (11,932)	$ 17,545	$ 39,737	$ (29,477)	(168)%	$ (22,192)	(56)%

Other expense, net increased in 2020 compared to 2019 primarily due to lower realized gains from sales of restricted marketable securities and expected credit losses associated with certain notes receivable, partially offset by prior period charges associated with certain letter of credit arrangements and the impairment of a strategic investment. See Note 7. “Consolidated Balance Sheet Details” to our consolidated financial statements for further information about the allowance for credit losses for our notes receivable.

Income tax benefit (expense)

Income tax expense or benefit, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect our best estimate of current and future taxes to be paid. We are subject to income taxes in both the United States and numerous foreign jurisdictions in which we operate, principally Japan, Malaysia, and Vietnam. Significant judgments and estimates are required to determine our consolidated income tax expense. The statutory federal corporate income tax rate in the United States is 21%, and the tax rates in Japan, Malaysia, and Vietnam are 30.6%, 24%, and 20%, respectively. In Malaysia, we have been granted a long-term tax holiday, scheduled to expire in 2027, pursuant to which substantially all of our income earned in Malaysia is exempt from income tax, conditional upon our continued compliance with certain employment and investment thresholds. In Vietnam, we have been granted a tax incentive, scheduled to expire at the end of 2025, pursuant to which income earned in Vietnam is subject to reduced tax rates.

The following table shows income tax benefit (expense) for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Income tax benefit (expense)	$ 107,294	$ 5,480	$ (3,441)	$ 101,814	1,858 %	$ 8,921	(259)%
Effective tax rate	(36.6)%	4.6 %	3.0 %				

Our tax rate is affected by recurring items, such as tax rates in foreign jurisdictions and the relative amounts of income we earn in those jurisdictions. The rate is also affected by discrete items that may occur in any given period, but are not consistent from period to period. Income tax benefit increased by $101.8 million during 2020 compared to 2019 primarily due to a tax benefit from the effect of tax law changes associated with the CARES Act, the reversal of uncertain tax positions due to the expiration of the statute of limitations, and the release of the valuation allowance associated with our Vietnamese subsidiary due to its current year operating income, partially offset by higher pretax income.

Equity in earnings, net of tax

Equity in earnings, net of tax represents our proportionate share of the earnings or losses from equity method investments as well as any gains or losses on the sale or disposal of such investments.

The following table shows equity in earnings, net of tax for the years ended December 31, 2020, 2019, and 2018:

	Years Ended			Change			
(Dollars in thousands)	2020	2019	2018	2020 over 2019		2019 over 2018	
Equity in earnings, net of tax	$ (2,129)	$ (284)	$ 34,620	$ (1,845)	650 %	$ (34,904)	(101)%

Equity in earnings, net of tax in 2020 was consistent with equity in earnings, net of tax in 2019.

Liquidity and Capital Resources

As of December 31, 2020, we believe that our cash, cash equivalents, marketable securities, cash flows from operating activities, contracts with customers for the future sale of solar modules, and advanced-stage project pipeline will be sufficient to meet our working capital, capital expenditure, and systems project investment needs for at least the next 12 months. As needed, we also believe we will have adequate access to the capital markets. In addition, we have availability under our Revolving Credit Facility, under which we have made no borrowings as of December 31, 2020. We monitor our working capital to ensure we have adequate liquidity, both domestically and internationally.

We intend to maintain appropriate debt levels based upon cash flow expectations, our overall cost of capital, and expected cash requirements for operations, such as systems project development activities in certain international regions. However, our ability to raise capital on terms commercially acceptable to us could be constrained if there is insufficient lender or investor interest due to company-specific, industry-wide, or broader market concerns, such as a tightening of the supply of capital due to the COVID-19 pandemic and related containment measures. Any incremental debt financings could result in increased debt service expenses and/or restrictive covenants, which could limit our ability to pursue our strategic plans.

As of December 31, 2020, we had $1.7 billion in cash, cash equivalents, and marketable securities compared to $2.2 billion as of December 31, 2019. The decrease in cash, cash equivalents, and marketable securities was primarily driven by purchases of property, plant and equipment; the $350 million settlement payment associated with our prior class action lawsuit; the timing of cash receipts from certain third-party module sales, for which proceeds were received in late 2019 prior to the step down in the U.S. investment tax credit from 30% to 26%; and other operating expenditures; partially offset by cash proceeds from the sale and construction of certain systems projects. As of December 31, 2020 and 2019, $1.1 billion and $0.9 billion, respectively, of our cash, cash equivalents, and marketable securities was held by our foreign subsidiaries and was primarily based in U.S. dollar, Japanese yen, and Indian rupee denominated holdings.

We utilize a variety of tax planning and financing strategies in an effort to ensure that our worldwide cash is available in the locations in which it is needed. If certain international funds were needed for our operations in the United States, we may be required to accrue and pay certain U.S. and foreign taxes to repatriate such funds. We maintain the intent and ability to permanently reinvest our accumulated earnings outside the United States, with the exception of our subsidiaries in Canada and Germany. In addition, changes to foreign government banking regulations may restrict our ability to move funds among various jurisdictions under certain circumstances, which could negatively impact our access to capital, resulting in an adverse effect on our liquidity and capital resources.

We continually evaluate forecasted global demand and seek to balance our manufacturing capacity with such demand. We continue to increase the nameplate production capacity of our existing manufacturing facilities by improving our production throughput, increasing module wattage (or conversion efficiency), and improving manufacturing yield losses. During 2021, we expect to spend $425 million to $475 million for capital expenditures, including upgrades to machinery and equipment that we believe will further increase our module wattage and expand capacity and throughput at our manufacturing facilities.

We also expect to commit significant working capital to purchase various raw materials used in our module manufacturing process. Our failure to obtain raw materials and components that meet our quality, quantity, and cost requirements in a timely manner could interrupt or impair our ability to manufacture our solar modules or increase our manufacturing costs. Accordingly, we may enter into long-term supply agreements to mitigate potential risks related to the procurement of key raw materials and components, and such agreements may be noncancelable or cancelable with a significant penalty. For example, we have entered into long-term supply agreements for the purchase of certain specified minimum volumes of substrate glass and cover glass for our PV solar modules. Our remaining purchases under these supply agreements are expected to be approximately $1.8 billion of substrate glass and $410 million of cover glass. We have the right to terminate these agreements upon payment of specified

termination penalties (which, in aggregate, are up to $390 million as of December 31, 2020 and decline over the remaining supply periods).

Our systems business is expected to continue to have significant liquidity requirements in the future. From time to time, we enter into commercial commitments in the form of letters of credit, bank guarantees, and surety bonds to provide financial and performance assurance to third parties, the majority of which support our systems projects. Our Revolving Credit Facility provides us with a sub-limit of $400.0 million to issue letters of credit, subject to certain additional limits depending on the currencies of such letters of credit. The net amount of our project assets and related portions of deferred revenue and long-term debt, which approximates our net capital investment in the development and construction of systems projects, was $260.6 million as of December 31, 2020. Solar power project development cycles, which span the time between the identification of a site location and the commercial operation of a system, vary substantially and can take many years to mature. As a result of these long project cycles and strategic decisions to finance the development of certain projects using our working capital, we may need to make significant up-front investments of resources in advance of the receipt of any cash from the sale of such projects. Delays in construction or in completing the sale of our systems projects that we are self-financing may also impact our liquidity. In certain circumstances, we may need to finance construction costs exclusively using working capital, if project financing becomes unavailable due to market-wide, regional, or other concerns.

From time to time, we may develop projects in certain markets around the world where we may hold all or a significant portion of the equity in a project for several years. Given the duration of these investments and the currency risk relative to the U.S. dollar in some of these markets, we continue to explore local financing alternatives. Should these financing alternatives be unavailable or too cost prohibitive, we could be exposed to significant currency risk and our liquidity could be adversely impacted.

Additionally, we may elect to retain an ownership interest in certain systems projects after they become operational if we determine it would be of economic and strategic benefit to do so. If, for example, we cannot sell a system at economics that are attractive to us or potential customers are unwilling to assume the risks and rewards typical of system ownership, we may instead elect to temporarily own and operate such system until we can sell it on economically attractive terms. The decision to retain ownership of a system impacts our liquidity depending upon the size and cost of the project. As of December 31, 2020, we had $243.4 million of net PV solar power systems that had been placed in service, primarily in international markets. We have elected, and may in the future elect, to enter into temporary or long-term project financing to reduce the impact on our liquidity and working capital with regard to such systems.

From time to time, we may be party to legal matters and claims against us. In January 2020, we entered into an MOU to settle a class action lawsuit filed in the Arizona District Court. Pursuant to the MOU, among other things, we agreed to pay a total of $350 million to settle the claims in the lawsuit in exchange for mutual releases and dismissal with prejudice of the complaint upon court approval of the settlement. In February 2020, we subsequently entered into a Stipulation and Agreement of Settlement (the “Settlement Agreement”) with certain named plaintiffs on terms and conditions that were consistent with the MOU. Pursuant to the Settlement Agreement, among other things, (i) we contributed $350 million in cash to a settlement fund that will be used to pay all settlement fees and expenses, attorneys’ fees and expenses, and cash payments to members of the settlement class and (ii) the settlement class has agreed to release us, the other defendants named in the class action, and certain of their respective related parties from any and all claims concerning, based on, arising out of, or in connection with the class action. The Settlement Agreement contained no admission of liability, wrongdoing, or responsibility by any of the parties. On June 30, 2020, the Arizona District Court entered an order granting final approval of the settlement and dismissed the Class Action with prejudice.

Cash Flows

The following table summarizes key cash flow activity for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	2020	2019	2018
Net cash provided by (used in) operating activities	$ 37,120	$ 174,201	$ (326,809)
Net cash used in investing activities	(131,227)	(362,298)	(682,714)
Net cash (used in) provided by financing activities	(82,587)	74,943	255,228
Effect of exchange rate changes on cash, cash equivalents and restricted cash	3,778	(2,959)	(13,558)
Net decrease in cash, cash equivalents and restricted cash	$ (172,916)	$ (116,113)	$ (767,853)

Operating Activities

The decrease in net cash provided by operating activities during 2020 was primarily driven by the $350 million settlement payment associated with our prior class action lawsuit as described above and the timing of cash receipts from certain third-party module sales, for which proceeds were received in late 2019 prior to the step down in the U.S. investment tax credit, partially offset by higher cash proceeds from the sale of systems projects in Japan and the United States.

Investing Activities

The decrease in net cash used in investing activities during 2020 was primarily due to lower purchases of property, plant and equipment.

Financing Activities

The increase in net cash used in financing activities during 2020 was primarily due to the repayment of the Ishikawa Credit Agreement, partially offset by proceeds from borrowings under project specific debt financings associated with the construction of certain projects in Japan.

Contractual Obligations

The following table presents the payments due by fiscal year for our outstanding contractual obligations as of December 31, 2020 (in thousands), excluding certain obligations we expect to transfer to Clairvest upon the closing of the sale of our North American O&M business and to OMERS upon the closing of the sale of our U.S. project development business:

		Payments Due by Year			
	Total	Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
Long-term debt obligations	$ 287,149	$ 41,801	$ 23,932	$ 62,287	$ 159,129
Interest payments (1)	116,030	11,433	21,881	19,818	62,898
Operating lease obligations	252,771	17,858	34,861	33,884	166,168
Purchase obligations (2)	1,058,664	590,516	198,993	161,730	107,425
Recycling obligations	130,688	—	—	—	130,688
Contingent consideration (3)	2,243	2,243	—	—	—
Other obligations (4)	3,541	2,122	1,119	300	—
Total	$ 1,851,086	$ 665,973	$ 280,786	$ 278,019	$ 626,308

(1) Includes estimated cash interest to be paid over the remaining terms of the underlying debt. Interest payments are based on fixed and floating rates as of December 31, 2020.

(2) Purchase obligations represent agreements to purchase goods or services, including open purchase orders and contracts with fixed volume commitments, that are noncancelable or cancelable with a significant penalty. Purchase obligations for our long-term supply agreements for the purchase of substrate glass and cover glass represent specified termination penalties, which are up to $390 million in the aggregate under the agreements. Our remaining purchases under these supply agreements are expected to be approximately $1.8 billion of substrate glass and $410 million of cover glass.

(3) In connection with business or project acquisitions, we may agree to pay additional amounts to the selling parties upon achievement of certain milestones. See Note 13. "Commitments and Contingencies" to our consolidated financial statements for further information.

(4) Includes expected letter of credit fees and unused revolver fees.

We have excluded $5.4 million of unrecognized tax benefits from the amounts presented above as the timing of such obligations is uncertain.

Off-Balance Sheet Arrangements

As of December 31, 2020, we had no off-balance sheet debt or similar obligations, other than financial assurance related instruments and operating leases, which are not classified as debt. We do not guarantee any third-party debt. See Note 13. "Commitments and Contingencies" to our consolidated financial statements for further information about our financial assurance related instruments.

Recent Accounting Pronouncements

See Note 3. "Recent Accounting Pronouncements" to our consolidated financial statements for a summary of recent accounting pronouncements.

Critical Accounting Estimates

In preparing our consolidated financial statements in conformity with generally accepted accounting principles in the United States ("U.S. GAAP"), we make estimates and assumptions that affect the amounts of reported assets, liabilities, revenues, and expenses, as well as the disclosure of contingent liabilities. Some of our accounting policies require the application of significant judgment in the selection of the appropriate assumptions for making these estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We base our judgments and estimates on our historical experience, our forecasts, and other available information as appropriate. The actual results experienced by us may differ materially and adversely from our estimates. To the extent there are material differences between our estimates and the actual results, our future results of operations will be affected. Our significant accounting policies are described in Note 2. "Summary of Significant Accounting Policies" to our consolidated financial statements. The accounting policies that require the most significant judgment and estimates include the following:

Revenue Recognition – Solar Power System Sales and/or EPC Services. We recognize revenue for the sale of a development project, which excludes EPC services, or for the sale of a completed system when we enter into the associated sales contract with the customer. For EPC services, or sales of solar power systems with EPC services, we generally recognize revenue over time as our performance creates or enhances an energy generation asset controlled by the customer. Furthermore, the sale of a solar power system combined with EPC services represents a single performance obligation for the development and construction of a single generation asset. For such arrangements, we recognize revenue and gross profit as work is performed using cost based input methods, for which we determine our progress toward contract completion based on the relationship between actual costs incurred and total estimated costs (including solar module costs) of the contract. Such revenue recognition is also dependent, in part, on our customers' commitment to perform their obligations under the contract, which is typically measured through the receipt of cash deposits or other forms of financial security issued by creditworthy financial institutions or parent entities.

Cost based input methods of revenue recognition are considered a faithful depiction of our efforts to satisfy long-term construction contracts and therefore reflect the transfer of goods to a customer under such contracts. Costs incurred that do not contribute to satisfying our performance obligations ("inefficient costs") are excluded from our input methods of revenue recognition as the amounts are not reflective of our transferring control of the system to the customer. Costs incurred toward contract completion may include costs associated with solar modules, direct materials, labor, subcontractors, and other indirect costs related to contract performance. We recognize solar module and direct material costs as incurred when such items have been installed in a system.

Cost based input methods of revenue recognition require us to make estimates of net contract revenues and costs to complete our projects. In making such estimates, significant judgment is required to evaluate assumptions related to the amount of net contract revenues, including the impact of any performance incentives, liquidated damages, and other payments to customers. Significant judgment is also required to evaluate assumptions related to the costs to complete our projects, including materials, labor, contingencies, and other system costs. If the estimated total costs on any contract, including any inefficient costs, are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of revisions to estimates related to net contract revenues or costs to complete contracts are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. The effect of the changes on future periods are recognized as if the revised estimates had been used since revenue was initially recognized under the contract. Such revisions could occur in any reporting period, and the effects may be material depending on the size of the contracts or the changes in estimates.

As part of our solar power system sales, we conduct performance testing of a system prior to substantial completion to confirm the system meets its operational and capacity expectations noted in the EPC agreement. In addition, we may provide an energy performance test during the first or second year of a system's operation to demonstrate that the actual energy generation for the applicable period meets or exceeds the modeled energy expectation, after certain adjustments. These tests are based on meteorological, energy, and equipment performance data measured at the system's location as well as certain projections of such data over the remaining measurement period. In certain instances, a bonus payment may be received at the end of the applicable test period if the system performs above a specified level. Conversely, if there is an underperformance event with regards to these tests, we may incur liquidated damages as a percentage of the EPC contract price. Such performance guarantees represent a form of variable consideration and are estimated at contract inception at their most likely amount and updated at the end of each reporting period as additional performance data becomes available and only to the extent that it is probable that a significant reversal of any incremental revenue will not occur.

Revenue Recognition – Operations and Maintenance. We recognize revenue for standard, recurring O&M services over time as customers receive and consume the benefits of such services. Costs of O&M services are expensed in the period in which they are incurred. As part of our O&M service offerings, we typically offer an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a specific period after adjusting for factors outside our control as the service provider. These tests are based on meteorological, energy, and equipment performance data measured at the system's location as well as certain projections of such data over the remaining measurement period. If system availability exceeds a contractual threshold, we may receive a bonus payment, or if system availability falls below a separate threshold, we may incur liquidated damages for certain lost energy under the PPA. Such bonuses or liquidated damages represent a form of variable consideration and are estimated and recognized over time as customers receive and consume the benefits of the O&M services.

Accrued Solar Module Collection and Recycling Liability. We previously established a module collection and recycling program, which has since been discontinued, to collect and recycle modules sold and covered under such program once the modules reach the end of their service lives. For legacy customer sales contracts that were covered under this program, we recognized expense at the time of sale for the estimated cost of our obligations to collect and recycle such modules. We estimate the cost of our collection and recycling obligations based on the present value of the expected future cost of collecting and recycling the solar modules, which includes estimates for the cost of

packaging materials; the cost of freight from the solar module installation sites to a recycling center; material, labor, and capital costs; and by-product credits for certain materials recovered during the recycling process. We base these estimates on our experience collecting and recycling solar modules and certain assumptions regarding costs at the time the solar modules will be collected and recycled. In the periods between the time of sale and the related settlement of the collection and recycling obligation, we accrete the carrying amount of the associated liability and classify the corresponding expense within "Selling, general and administrative" expense on our consolidated statements of operations. We periodically review our estimates of expected future recycling costs and may adjust our liability accordingly.

Product Warranties. We provide a limited PV solar module warranty covering defects in materials and workmanship under normal use and service conditions for up to 12 years. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 98% of their labeled power output rating during the first year, with the warranty coverage reducing by a degradation factor every year thereafter throughout the limited power output warranty period of up to 30 years. Among other things, our solar module warranty also covers the resulting power output loss from cell cracking.

As an alternative form of our standard limited module power output warranty, we have also offered an aggregated or system-level limited module performance warranty. This system-level limited module performance warranty is designed for utility-scale systems and provides 25-year system-level energy degradation protection. This warranty represents a practical expedient to address the challenge of identifying, from the potential millions of modules installed in a utility-scale system, individual modules that may be performing below warranty thresholds by focusing on the aggregate energy generated by the system rather than the power output of individual modules. The system-level limited module performance warranty is typically calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty.

In addition to our limited solar module warranties described above, for PV solar power systems we construct, we typically provide limited warranties for defects in engineering design, installation, and BoS part workmanship for a period of one to two years following the substantial completion of a system or a block within the system.

When we recognize revenue for module or system sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations. We make and revise these estimates based primarily on the number of our solar modules under warranty installed at customer locations, our historical experience with and projections of warranty claims, and our estimated per-module replacement costs. We also monitor our expected future module performance through certain quality and reliability testing and actual performance in certain field installation sites. In general, we expect the return rates for our newer series of module technology to be lower than our older series. We estimate that the return rate for such newer series of module technology will be less than 1%.

Income Taxes. We are subject to the income tax laws of the United States, its states and municipalities, and those of the foreign jurisdictions in which we have significant business operations. Such tax laws are complex and subject to different interpretations by the taxpayer and the relevant taxing authorities. We make judgments and interpretations regarding the application of these inherently complex tax laws when determining our provision for income taxes and also make estimates about when in the future certain items are expected to affect taxable income in the various tax jurisdictions. Disputes over interpretations of tax laws may be settled with the relevant taxing authority upon examination or audit. We regularly evaluate the likelihood of assessments in each of our taxing jurisdictions resulting from current and future examinations, and we record tax liabilities as appropriate.

In preparing our consolidated financial statements, we calculate our income tax provision based on our interpretation of the tax laws and regulations in the various jurisdictions where we conduct business. This requires us to estimate our current tax obligations, assess uncertain tax positions, and assess temporary differences between the financial statement carrying amounts and the tax basis of assets and liabilities. These temporary differences result in deferred tax assets and liabilities. We must also assess the likelihood that each of our deferred tax assets will be realized. To

the extent we believe that realization of any of our deferred tax assets is not more likely than not, we establish a valuation allowance. When we establish a valuation allowance or increase this allowance in a reporting period, we generally record a corresponding tax expense. Conversely, to the extent circumstances indicate that a valuation allowance is no longer necessary, that portion of the valuation allowance is reversed, which generally reduces our overall income tax expense.

We establish liabilities for potential additional taxes based on our assessment of the outcome of our tax positions. Once established, we adjust these liabilities when additional information becomes available or when an event occurs requiring an adjustment. Significant judgment is required in making these estimates and the actual cost of a tax assessment, fine, or penalty may ultimately be materially different from our recorded liabilities, if any.

We continually explore initiatives to better align our tax and legal entity structure with the footprint of our global operations and recognize the tax impact of these initiatives, including changes in the assessment of uncertain tax positions, indefinite reinvestment exception assertions, and the realizability of deferred tax assets, in the period when we believe all necessary internal and external approvals associated with such initiatives have been obtained, or when the initiatives are materially complete.

Asset Impairments. We assess long-lived assets classified as “held and used,” including our property, plant and equipment; PV solar power systems; project assets; operating lease assets; and intangible assets for impairment whenever events or changes in circumstances arise, including consideration of technological obsolescence, that may indicate that the carrying amount of such assets may not be recoverable, and these assessments require significant judgment in determining whether such events or changes have occurred. These events or changes in circumstances may include a significant decrease in the market price of a long-lived asset; a significant adverse change in the extent or manner in which a long-lived asset is being used or in its physical condition; a significant adverse change in the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; a current-period operating or cash flow loss combined with a history of such losses or a projection of future losses associated with the use of a long-lived asset; or a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. For purposes of recognition and measurement of an impairment loss, long-lived assets are 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, and we must also exercise judgment in assessing such groupings and levels.

When impairment indicators are present, we compare 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. If the carrying value of the asset group exceeds the undiscounted future cash flows, we measure any impairment by comparing the fair value of the asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted cash flows for the asset group, (ii) third-party valuations, and/or (iii) information available regarding the current market value for such assets. If the fair value of an asset group is determined to be less than its carrying value, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs. Estimating future cash flows requires significant judgment, and such projections may vary from the cash flows eventually realized.

Item 7A. *Quantitative and Qualitative Disclosures about Market Risk*

Foreign Currency Exchange Risk

Cash Flow Exposure. We expect certain of our subsidiaries to have future cash flows that will be denominated in currencies other than the subsidiaries’ functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge a portion of these forecasted cash flows. These foreign exchange forward

contracts qualify for accounting as cash flow hedges in accordance with ASC 815 and we designated them as such. We initially report unrealized gains or losses for such contracts in “Accumulated other comprehensive loss” and subsequently reclassify amounts into earnings when the hedged transaction occurs and impacts earnings. For additional details on our derivative hedging instruments and activities, see Note 8. “Derivative Financial Instruments” to our consolidated financial statements.

Certain of our international operations, such as our manufacturing facilities in Malaysia and Vietnam, pay a portion of their operating expenses, including associate wages and utilities, in local currencies, which exposes us to foreign currency exchange risk for such expenses. Our manufacturing facilities are also exposed to foreign currency exchange risk for purchases of certain equipment from international vendors. To the extent we expand into new markets, particularly emerging markets, our total foreign currency exchange risk, in terms of both size and exchange rate volatility, and the number of foreign currencies we are exposed to could increase significantly.

For the year ended December 31, 2020, 22% of our net sales were denominated in foreign currencies, including Japanese yen and Euro. As a result, we have exposure to foreign currencies with respect to our net sales, which has historically represented one of our primary foreign currency exchange risks. A 10% change in the U.S. dollar to Japanese yen and Euro exchange rates would have had an aggregate impact on our net sales of $53.8 million, excluding the effect of our hedging activities.

Transaction Exposure. Many of our subsidiaries have assets and liabilities (primarily cash, receivables, deferred taxes, payables, accrued expenses, and solar module collection and recycling liabilities) that are denominated in currencies other than the subsidiaries’ functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which these assets and liabilities are denominated will create fluctuations in our reported consolidated statements of operations and cash flows. We may enter into foreign exchange forward contracts or other financial instruments to economically hedge assets and liabilities against the effects of currency exchange rate fluctuations. The gains and losses on such foreign exchange forward contracts will economically offset all or part of the transaction gains and losses that we recognize in earnings on the related foreign currency denominated assets and liabilities. For additional details on our economic hedging instruments and activities, see Note 8. “Derivative Financial Instruments” to our consolidated financial statements.

As of December 31, 2020, a 10% change in the U.S. dollar relative to our primary foreign currency exposures would not have had a significant impact to our net foreign currency income or loss, including the effect of our hedging activities.

Interest Rate Risk

Variable Rate Debt Exposure. We are exposed to interest rate risk as certain of our project specific debt financings have variable interest rates, exposing us to variability in interest expense and cash flows. See Note 12. “Debt” to our consolidated financial statements for additional information on our long-term debt borrowing rates. An increase in relevant interest rates would increase the cost of borrowing under certain of our project specific debt financings. If such variable interest rates changed by 100 basis points, our interest expense for the year ended December 31, 2020 would have changed by $1.2 million, including the effect of our hedging activities.

Customer Financing Exposure. We are also indirectly exposed to interest rate risk because many of our customers depend on debt financings to purchase modules or systems. An increase in interest rates could make it challenging for our customers to obtain the capital necessary to make such purchases on favorable terms, or at all. Such factors could reduce demand or lower the price we can charge for our modules and systems, thereby reducing our net sales and gross profit. In addition, we believe that a significant percentage of our customers purchase systems as an investment, funding the initial capital expenditure through a combination of equity and debt. An increase in interest rates could lower an investor’s return on investment in a system or make alternative investments more attractive relative to PV solar power systems, which, in either case, could cause these end-users to seek alternative investments with higher risk-adjusted returns.

Marketable Securities and Restricted Marketable Securities Exposure. We invest in various debt securities, which exposes us to interest rate risk. The primary objectives of our investment activities are to preserve principal and provide liquidity, while at the same time maximizing the return on our investments. Many of the securities in which we invest may be subject to market risk. Accordingly, a change in prevailing interest rates may cause the market value of such investments to fluctuate. For example, if we hold a security that was issued with an interest rate fixed at the then-prevailing rate and the prevailing interest rate subsequently rises, the market value of our investment may decline.

For the year ended December 31, 2020, our marketable securities earned a return of 2%, including the impact of fluctuations in the price of the underlying securities, and had a weighted-average maturity of 8 months as of the end of the period. Based on our investment positions as of December 31, 2020, a hypothetical 100 basis point change in interest rates would have resulted in a $0.8 million change in the market value of our investment portfolio. For the year ended December 31, 2020, our restricted marketable securities earned a return of 19%, including the impact of fluctuations in the price of the underlying securities, and had a weighted-average maturity of approximately 15 years as of the end of the period. Based on our restricted marketable securities positions as of December 31, 2020, a hypothetical 100 basis point change in interest rates would have resulted in a $40.2 million change in the market value of our restricted marketable securities portfolio.

Commodity and Component Risk

We are exposed to price risks for the raw materials, components, services, and energy costs used in the manufacturing and transportation of our solar modules and BoS parts used in our systems. Additionally, some of our raw materials and components are sourced from a limited number of suppliers or a single supplier. We evaluate our suppliers using a robust qualification process. In some cases, we also enter into long-term supply contracts for raw materials and components. Accordingly, we are exposed to price changes in the raw materials and components used in our solar modules and systems. From time to time, we may utilize derivative hedging instruments to mitigate such raw material price changes. In addition, the failure of a key supplier could disrupt our supply chain, which could result in higher prices and/or a disruption in our manufacturing or construction processes. We may be unable to pass along changes in the costs of the raw materials and components for our modules and systems to our customers and may be in default of our delivery obligations if we experience a manufacturing or construction disruption.

Credit Risk

We have certain financial and derivative instruments that subject us to credit risk. These consist primarily of cash, cash equivalents, marketable securities, accounts receivable, restricted cash and investments, notes receivable, foreign exchange forward contracts, and commodity swap contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash equivalents, marketable securities, restricted cash, restricted marketable securities, foreign exchange forward contracts, and commodity swap contracts with various high-quality financial institutions and limit the amount of credit risk from any one counterparty. We continuously evaluate the credit standing of our counterparty financial institutions. We monitor the financial condition of our customers and perform credit evaluations whenever considered necessary. Depending upon the sales arrangement, we may require some form of payment security from our customers, including, but not limited to, advance payments, parent guarantees, standby letters of credit, bank guarantees, surety bonds, or commercial letters of credit. We also have PPAs that subject us to credit risk in the event our off-take counterparties are unable to fulfill their contractual obligations, which may adversely affect our project assets and certain receivables. Accordingly, we closely monitor the credit standing of existing and potential off-take counterparties to limit such risks.

Item 8. ***Financial Statements and Supplementary Data***

Consolidated Financial Statements

Our consolidated financial statements as required by this item are included in Item 15. “Exhibits and Financial Statement Schedules.” See Item 15(a) for a list of our consolidated financial statements.

Selected Quarterly Financial Data (Unaudited)

The following selected quarterly financial data should be read in conjunction with our consolidated financial statements and the related notes thereto and Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” This information has been derived from our unaudited consolidated financial statements that, in our opinion, reflect all recurring adjustments necessary to fairly present the information when read in conjunction with our consolidated financial statements. The results of operations for any quarter are not necessarily indicative of the results to be expected for any future period.

	Quarters Ended							
	Dec 31, 2020	Sep 30, 2020	Jun 30, 2020	Mar 31, 2020	Dec 31, 2019	Sep 30, 2019	Jun 30, 2019	Mar 31, 2019
	(In thousands, except per share amounts)							
Net sales	$ 609,232	$ 927,565	$ 642,411	$ 532,124	$ 1,399,377	$ 546,806	$ 584,956	$ 531,978
Gross profit	159,860	293,015	137,460	90,338	333,555	138,363	77,182	112
Production start-up	16,716	13,019	6,311	4,482	7,351	18,605	10,437	9,522
Litigation loss	—	—	6,000	—	363,000	—	—	—
Operating income (loss)	57,774	207,163	50,896	1,656	(117,866)	41,304	(8,584)	(76,639)
Net income (loss)	115,703	155,037	36,911	90,704	(59,408)	30,622	(18,548)	(67,599)
Net income (loss) per share:								
Basic	$ 1.09	$ 1.46	$ 0.35	$ 0.86	$ (0.56)	$ 0.29	$ (0.18)	$ (0.64)
Diluted	$ 1.08	$ 1.45	$ 0.35	$ 0.85	$ (0.56)	$ 0.29	$ (0.18)	$ (0.64)

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

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our “disclosure controls and procedures” as defined in Exchange Act Rule 13a-15(e) and 15d-15(e). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that as of December 31, 2020 our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate "internal control over financial reporting," as defined in Exchange Act Rule 13a-15(f) and 15d-15(f). We also carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our internal control over financial reporting as of December 31, 2020 based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our 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 U.S. GAAP. Based on such evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2020. The effectiveness of our internal control over financial reporting as of December 31, 2020 has also been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report which appears herein.

Changes in Internal Control over Financial Reporting

We also carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of our "internal control over financial reporting" to determine whether any changes in our internal control over financial reporting occurred during the quarter ended December 31, 2020 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, there were no such changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020.

Limitations on the Effectiveness of Controls

Control systems, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control systems' objectives are being met. Further, the design of any system of controls must reflect the fact that there are resource constraints, and the benefits of all controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of error or mistake. Control systems can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

Item 9B. *Other Information*

None.

PART III

Item 10. ***Directors, Executive Officers, and Corporate Governance***

For information with respect to our executive officers, see Item 1. "Business – Information about Our Executive Officers." Information concerning our board of directors and audit committee of our board of directors will appear in our 2021 Proxy Statement, under the sections "Directors" and "Corporate Governance," and information concerning Section 16(a) beneficial ownership reporting compliance will appear in our 2021 Proxy Statement under the section "Section 16(a) Beneficial Ownership Reporting Compliance." We have adopted a Code of Business Conduct and Ethics that applies to all directors, officers, and associates of First Solar. Information concerning this code will appear in our 2021 Proxy Statement under the section "Corporate Governance." The information in such sections of the Proxy Statement is incorporated by reference into this Annual Report on Form 10-K.

Item 11. ***Executive Compensation***

Information concerning executive compensation and related information will appear in our 2021 Proxy Statement under the section "Executive Compensation," and information concerning the compensation committee of our board of directors (the "compensation committee") will appear under the sections "Corporate Governance" and "Compensation Committee Report." The information in such sections of the 2021 Proxy Statement is incorporated by reference into this Annual Report on Form 10-K.

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

Information concerning the security ownership of certain beneficial owners and management and related stockholder matters, including certain information regarding our equity compensation plans, will appear in our 2021 Proxy Statement under the section "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters." The information in such section of the Proxy Statement is incorporated by reference into this Annual Report on Form 10-K.

Equity Compensation Plans

The following table sets forth certain information as of December 31, 2020 concerning securities authorized for issuance under our equity compensation plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights (a)(1)	Weighted-Average Exercise Price of Outstanding Options and Rights (b)(2)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by stockholders	1,852,256	$ —	6,608,877
Equity compensation plans not approved by stockholders	—	—	—
Total	1,852,256	$ —	6,608,877

(1) Includes 1,852,256 shares issuable upon vesting of restricted stock units ("RSUs") granted under our 2020 Omnibus Incentive Compensation Plan ("2020 Omnibus Plan").

(2) The weighted-average exercise price does not take into account the shares issuable upon vesting of outstanding RSUs, which have no exercise price.

See Note 16. “Share-Based Compensation” to our consolidated financial statements for further discussion on our equity compensation plans.

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

Information concerning certain relationships and related party transactions will appear in our 2021 Proxy Statement under the section “Certain Relationships and Related Party Transactions,” and information concerning director independence will appear in our 2021 Proxy Statement under the section “Corporate Governance.” The information in such sections of the Proxy Statement is incorporated by reference into this Annual Report on Form 10-K.

Item 14. ***Principal Accounting Fees and Services***

Information concerning principal accounting fees and services and the audit committee of our board of directors’ pre-approval policies and procedures for these items will appear in our 2021 Proxy Statement under the section “Principal Accounting Fees and Services.” The information in such section of the Proxy Statement is incorporated by reference into this Annual Report on Form 10-K.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) *Documents.* The following documents are filed as part of this Annual Report on Form 10-K:

Report of Independent Registered Public Accounting Firm
Consolidated Balance Sheets
Consolidated Statements of Operations
Consolidated Statements of Comprehensive Income
Consolidated Statements of Stockholders’ Equity
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements

(b) *Exhibits.* Unless otherwise noted, the exhibits listed on the accompanying Index to Exhibits are filed with or incorporated by reference into this Annual Report on Form 10-K.

(c) *Financial Statement Schedules.* All financial statement schedules have been omitted as the required information is not applicable or is not material to require presentation of the schedule, or because the information required is included in the consolidated financial statements and notes thereto of this Annual Report on Form 10-K.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of First Solar, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of First Solar, Inc. and its subsidiaries ("the Company") as of December 31, 2020 and 2019, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission ("SEC") and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Solar Module Collection and Recycling Liability

As described in Note 11 to the consolidated financial statements, certain of the Company's legacy sales were covered by a module collection and recycling program, which was previously established to collect and recycle modules sold and covered under such program once the modules reach the end of their useful lives. The Company's accrued solar module collection and recycling liability was $130.7 million as of December 31, 2020. Management estimates the cost of collection and recycling obligations based on the present value of the expected future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging materials; the cost of freight from the solar module installation sites to a recycling center; material, labor, and capital costs; and by-product credits for certain materials recovered during the recycling process. Management bases these estimates on experience collecting and recycling the solar modules and certain assumptions regarding costs at the time the solar modules will be collected and recycled.

The principal considerations for our determination that performing procedures relating to the solar module collection and recycling liability is a critical audit matter are (i) the significant judgment by management when developing the estimated costs of this program; and (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate audit evidence related to management's significant assumptions related to the cost of freight from the solar module installation sites to a recycling center, capital costs, present value assumptions, and the assumption regarding costs at the time the solar modules will be collected and recycled, and evaluating audit evidence related to the results of those procedures.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to valuation of the solar module collection and recycling liability. These procedures also included, among others, testing management's process for developing the expected future cost of collecting and recycling the solar modules including evaluating the reasonableness of the significant assumptions used by management related to the cost of freight from the solar module installation sites to a recycling center, capital costs, present value assumptions, and the assumption regarding costs at the time the solar modules will be collected and recycled. Evaluating the reasonableness of the significant assumptions involved (i) testing actual recycling costs incurred, (ii) obtaining and evaluating evidence from third parties, and (iii) evaluating other underlying input data considered by management in the development of its recycling liability.

Product Warranty Liability

As described in Notes 2 and 13 to the consolidated financial statements, the Company provides a limited PV solar module warranty which covers defects in materials and workmanship for up to 12 years and warrants that modules will produce at least a specified minimum percentage of their labeled power output rating, on either an individual module or system-level basis, for up to 30 years. The Company's product warranty liability was $95.1 million as of December 31, 2020. Product warranty estimates are based primarily on the number of solar modules under warranty installed at customer locations, historical experience with and projections of warranty claims, and estimated per-module replacement costs.

The principal considerations for our determination that performing procedures relating to the product warranty liability is a critical audit matter are (i) the significant judgment by management in estimating the projections of warranty claims; and (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate the projections of warranty claims and related audit evidence.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to valuation of the product warranty liability. These procedures also included, among others, testing the appropriateness of the methodology used and the reasonableness of the significant assumptions used by management in developing these estimates related to projections of warranty claims. Evaluating whether the significant assumptions relating to the product warranty liability were reasonable involved (i) testing historical warranty claims and settlements, (ii) evaluating the reasonableness and appropriateness of factors considered by management in estimating the final settlement of open customer claims, and (iii) evaluating the reasonableness and appropriateness of the methodology used by management to determine return rates used in the valuation of the product warranty liability.

/s/ PricewaterhouseCoopers LLP

Phoenix, Arizona
February 25, 2021

We have served as the Company's or its predecessor's auditor since 2000, which includes periods before the Company became subject to SEC reporting requirements.

FIRST SOLAR, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	December 31,	
	2020	2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,227,002	$ 1,352,741
Marketable securities (amortized cost of $519,844 and allowance for credit losses of $121 at December 31, 2020)	520,066	811,506
Accounts receivable trade	269,095	476,425
Less: allowance for credit losses	(3,009)	(1,386)
Accounts receivable trade, net	266,086	475,039
Accounts receivable, unbilled and retainage	26,673	183,473
Less: allowance for credit losses	(303)	—
Accounts receivable, unbilled and retainage, net	26,370	183,473
Inventories	567,587	443,513
Balance of systems parts	30	53,583
Project assets	—	3,524
Assets held for sale	155,685	—
Prepaid expenses and other current assets	251,709	276,455
Total current assets	3,014,535	3,599,834
Property, plant and equipment, net	2,402,285	2,181,149
PV solar power systems, net	243,396	476,977
Project assets	373,377	333,596
Deferred tax assets, net	104,099	130,771
Restricted marketable securities (amortized cost of $247,628 and allowance for credit losses of $13 at December 31, 2020)	265,280	223,785
Goodwill	14,462	14,462
Intangible assets, net	56,138	64,543
Inventories	201,229	160,646
Other assets	434,130	329,926
Total assets	$ 7,108,931	$ 7,515,689
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 183,349	$ 218,081
Income taxes payable	14,571	17,010
Accrued expenses	310,467	351,260
Current portion of long-term debt	41,540	17,510
Deferred revenue	188,813	323,217
Accrued litigation	—	363,000
Liabilities held for sale	25,621	—
Other current liabilities	83,037	28,130
Total current liabilities	847,398	1,318,208
Accrued solar module collection and recycling liability	130,688	137,761
Long-term debt	237,691	454,187
Other liabilities	372,226	508,766
Total liabilities	1,588,003	2,418,922
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value per share; 500,000,000 shares authorized; 105,980,466 and 105,448,921 shares issued and outstanding at December 31, 2020 and 2019, respectively	106	105
Additional paid-in capital	2,866,786	2,849,376
Accumulated earnings	2,715,762	2,326,620
Accumulated other comprehensive loss	(61,726)	(79,334)
Total stockholders' equity	5,520,928	5,096,767
Total liabilities and stockholders' equity	$ 7,108,931	$ 7,515,689

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Years Ended December 31,		
	2020	2019	2018
Net sales	$ 2,711,332	$ 3,063,117	$ 2,244,044
Cost of sales	2,030,659	2,513,905	1,851,867
Gross profit	680,673	549,212	392,177
Operating expenses:			
Selling, general and administrative	222,918	205,471	176,857
Research and development	93,738	96,611	84,472
Production start-up	40,528	45,915	90,735
Litigation loss	6,000	363,000	—
Total operating expenses	363,184	710,997	352,064
Operating income (loss)	317,489	(161,785)	40,113
Foreign currency (loss) income, net	(4,890)	2,291	(570)
Interest income	16,559	48,886	59,788
Interest expense, net	(24,036)	(27,066)	(25,921)
Other (expense) income, net	(11,932)	17,545	39,737
Income (loss) before taxes and equity in earnings	293,190	(120,129)	113,147
Income tax benefit (expense)	107,294	5,480	(3,441)
Equity in earnings, net of tax	(2,129)	(284)	34,620
Net income (loss)	$ 398,355	$ (114,933)	$ 144,326
Net income (loss) per share:			
Basic	$ 3.76	$ (1.09)	$ 1.38
Diluted	$ 3.73	$ (1.09)	$ 1.36
Weighted-average number of shares used in per share calculations:			
Basic	105,867	105,310	104,745
Diluted	106,686	105,310	106,113

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Years Ended December 31,		
	2020	2019	2018
Net income (loss)	$ 398,355	$ (114,933)	$ 144,326
Other comprehensive income (loss):			
Foreign currency translation adjustments	(2,810)	(7,049)	(1,034)
Unrealized gain (loss) on marketable securities and restricted marketable securities, net of tax of $(1,231), $3,046, and $3,735	21,659	(15,670)	(57,747)
Unrealized (loss) gain on derivative instruments, net of tax of $(31), $142, and $(996)	(1,241)	(2,149)	2,056
Other comprehensive income (loss)	17,608	(24,868)	(56,725)
Comprehensive income (loss)	$ 415,963	$ (139,801)	$ 87,601

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Earnings	Accumulated Other Comprehensive (Loss) Income	Total Equity
	Shares	Amount				
Balance at December 31, 2017	104,468	$ 104	$ 2,799,107	$ 2,297,227	$ 2,259	$ 5,098,697
Net income	—	—	—	144,326	—	144,326
Other comprehensive loss	—	—	—	—	(56,725)	(56,725)
Common stock issued for share-based compensation	588	1	3,425	—	—	3,426
Tax withholding related to vesting of restricted stock	(171)	—	(11,175)	—	—	(11,175)
Share-based compensation expense	—	—	33,854	—	—	33,854
Balance at December 31, 2018	104,885	105	2,825,211	2,441,553	(54,466)	5,212,403
Net loss	—	—	—	(114,933)	—	(114,933)
Other comprehensive loss	—	—	—	—	(24,868)	(24,868)
Common stock issued for share-based compensation	869	1	3,433	—	—	3,434
Tax withholding related to vesting of restricted stock	(305)	(1)	(16,089)	—	—	(16,090)
Share-based compensation expense	—	—	36,821	—	—	36,821
Balance at December 31, 2019	105,449	105	2,849,376	2,326,620	(79,334)	5,096,767
Cumulative-effect adjustment for the adoption of ASU 2016-13	—	—	—	(9,213)	—	(9,213)
Net income	—	—	—	398,355	—	398,355
Other comprehensive income	—	—	—	—	17,608	17,608
Common stock issued for share-based compensation	814	1	1,362	—	—	1,363
Tax withholding related to vesting of restricted stock	(283)	—	(13,118)	—	—	(13,118)
Share-based compensation expense	—	—	29,166	—	—	29,166
Balance at December 31, 2020	105,980	$ 106	$ 2,866,786	$ 2,715,762	$ (61,726)	$ 5,520,928

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net income (loss)	$ 398,355	$ (114,933)	$ 144,326
Adjustments to reconcile net income (loss) to cash provided by (used in) operating activities:			
Depreciation, amortization and accretion	232,925	205,475	130,736
Impairments and net losses on disposal of long-lived assets	35,806	7,577	8,065
Share-based compensation	29,267	37,429	34,154
Equity in earnings, net of tax	2,129	284	(34,620)
Distributions received from equity method investments	—	—	12,394
Remeasurement of monetary assets and liabilities	1,359	919	8,740
Deferred income taxes	36,013	(59,917)	(10,112)
Gains on sales of marketable securities and restricted marketable securities	(15,346)	(40,621)	(55,405)
Liabilities assumed by customers for the sale of systems	(136,745)	(88,050)	(240,865)
Other, net	15,809	759	2,121
Changes in operating assets and liabilities:			
Accounts receivable, trade, unbilled and retainage	345,150	(73,594)	(202,298)
Prepaid expenses and other current assets	(992)	(34,528)	(53,488)
Inventories and balance of systems parts	(145,396)	(83,528)	(257,229)
Project assets and PV solar power systems	106,867	(20,773)	49,939
Other assets	(32,073)	28,728	(11,920)
Income tax receivable and payable	(177,431)	8,035	(49,169)
Accounts payable	(43,285)	(336)	96,443
Accrued expenses and other liabilities	(606,111)	397,527	132,382
Accrued solar module collection and recycling liability	(9,181)	3,748	(31,003)
Net cash provided by (used in) operating activities	37,120	174,201	(326,809)
Cash flows from investing activities:			
Purchases of property, plant and equipment	(416,635)	(668,717)	(739,838)
Purchases of marketable securities and restricted marketable securities	(901,924)	(1,177,336)	(1,369,036)
Proceeds from sales and maturities of marketable securities and restricted marketable securities	1,192,832	1,486,631	1,135,984
Proceeds from sales of equity method investments	—	—	247,595
Payments received on notes receivable, affiliates	—	—	48,729
Other investing activities	(5,500)	(2,876)	(6,148)
Net cash used in investing activities	(131,227)	(362,298)	(682,714)
Cash flows from financing activities:			
Repayment of long-term debt	(225,344)	(30,099)	(18,937)
Proceeds from borrowings under long-term debt, net of discounts and issuance costs	156,679	120,132	290,925
Payments of tax withholdings for restricted shares	(13,118)	(16,089)	(11,175)
Other financing activities	(804)	999	(5,585)
Net cash (used in) provided by financing activities	(82,587)	74,943	255,228
Effect of exchange rate changes on cash, cash equivalents and restricted cash	3,778	(2,959)	(13,558)
Net decrease in cash, cash equivalents and restricted cash	(172,916)	(116,113)	(767,853)
Cash, cash equivalents and restricted cash, beginning of the period	1,446,510	1,562,623	2,330,476
Cash, cash equivalents and restricted cash, end of the period	$ 1,273,594	$ 1,446,510	$ 1,562,623
Supplemental disclosure of noncash investing and financing activities:			
Property, plant and equipment acquisitions funded by liabilities	$ 110,576	$ 76,148	$ 138,270
Sale of system previously accounted for as sale-leaseback financing	$ —	$ —	$ 31,992
Accrued interest capitalized to long-term debt	$ —	$ —	$ 3,512

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. First Solar and Its Business

We are a leading global provider of PV solar energy solutions. We design, manufacture, and sell PV solar modules with an advanced thin film semiconductor technology. In certain markets, we also develop and sell PV solar power systems that primarily use the modules we manufacture and provide O&M services to system owners. We have substantial, ongoing R&D efforts focused on various technology innovations. We are the world's largest thin film PV solar module manufacturer and the largest PV solar module manufacturer in the Western Hemisphere.

2. Summary of Significant Accounting Policies

Basis of Presentation. These consolidated financial statements include the accounts of First Solar, Inc. and its subsidiaries and are prepared in accordance with U.S. GAAP. We eliminated all intercompany transactions and balances during consolidation. Certain prior year balances were reclassified to conform to the current year presentation.

Use of Estimates. The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and the accompanying notes. On an ongoing basis, we evaluate our estimates, including those related to inputs used to recognize revenue over time, accrued solar module collection and recycling liabilities, product warranties, accounting for income taxes, and long-lived asset impairments. Despite our intention to establish accurate estimates and reasonable assumptions, actual results could differ materially from such estimates and assumptions.

Fair Value Measurements. We measure certain assets and liabilities at fair value, which is defined as 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 in the principal or most advantageous market for the asset or liability. Our fair value measurements use the following hierarchy, which prioritizes valuation inputs based on the extent to which the inputs are observable in the market.

- Level 1 – Valuation techniques in which all significant inputs are unadjusted quoted prices from active markets for assets or liabilities that are identical to the assets or liabilities being measured.

- Level 2 – Valuation techniques in which significant inputs include quoted prices from active markets for assets or liabilities that are similar to the assets or liabilities being measured and/or quoted prices for assets or liabilities that are identical or similar to the assets or liabilities being measured from markets that are not active. Also, model-derived valuations in which all significant inputs are observable in active markets are Level 2 valuation techniques.

- Level 3 – Valuation techniques in which one or more significant inputs are unobservable. Such inputs reflect our estimate of assumptions that market participants would use to price an asset or liability.

Cash and Cash Equivalents. We consider highly liquid investments with original maturities of three months or less at the time of purchase to be cash equivalents with the exception of time deposits, which are presented as marketable securities.

Restricted Cash. Restricted cash consists of cash and cash equivalents held by various banks to secure certain of our letters of credit and other such deposits designated for the construction or operation of systems projects as well as the payment of amounts related to project specific debt financings. Restricted cash also includes cash and cash equivalents held in custodial accounts to fund the estimated future costs of our solar module collection and recycling obligations.

Restricted cash for our letters of credit is classified as current or noncurrent based on the maturity date of the corresponding letter of credit. Restricted cash for project construction, operation, and financing is classified as current or noncurrent based on the intended use of the restricted funds. Restricted cash held in custodial accounts is classified as noncurrent to align with the nature of the corresponding collection and recycling liabilities.

Marketable Securities and Restricted Marketable Securities. We determine the classification of our marketable securities and restricted marketable securities at the time of purchase and reevaluate such designation at each balance sheet date. As of December 31, 2020 and 2019, all of our marketable securities and restricted marketable securities were classified as available-for-sale debt securities. Accordingly, we record them at fair value and account for the net unrealized gains and losses as part of "Accumulated other comprehensive loss" until realized. We record realized gains and losses on the sale of our marketable securities and restricted marketable securities in "Other (expense) income, net" computed using the specific identification method.

We may sell marketable securities prior to their stated maturities after consideration of our liquidity requirements. We view unrestricted securities with maturities beyond 12 months as available to support our current operations and, accordingly, classify such securities as current assets under "Marketable securities" in the consolidated balance sheets. Restricted marketable securities consist of long-term duration marketable securities that we hold in custodial accounts to fund the estimated future costs of our solar module collection and recycling obligations. Accordingly, we classify restricted marketable securities as noncurrent assets under "Restricted marketable securities" in the consolidated balance sheets.

Accounts Receivable Trade. We record trade accounts receivable for our unconditional rights to consideration arising from our performance under contracts with customers. The carrying value of such receivables, net of the allowance for credit losses, represents their estimated net realizable value. Our module and other equipment sales generally include up to 45-day payment terms following the transfer of control of the products to the customer. In addition, certain module and equipment sale agreements may require a down payment for a portion of the transaction price upon or shortly after entering into the agreement or related purchase order. Payment terms for sales of our solar power systems, EPC services, and operations and maintenance services vary by contract but are generally due upon demand or within several months of satisfying the associated performance obligations. As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. We typically do not include extended payment terms in our contracts with customers.

Accounts Receivable, Unbilled. Accounts receivable, unbilled represents a contract asset for revenue that has been recognized in advance of billing the customer, which is common for long-term construction contracts. For example, we typically recognize revenue from contracts for the construction and sale of PV solar power systems over time using cost based input methods, which recognize revenue and gross profit as work is performed based on the relationship between actual costs incurred compared to the total estimated costs of the contract. Accordingly, revenue could be recognized in advance of billing the customer, resulting in an amount recorded to "Accounts receivable, unbilled and retainage" or "Other assets" depending on the expected timing of payment for such unbilled receivables. Once we have an unconditional right to consideration under a construction contract, we typically bill our customer and reclassify the "Accounts receivable, unbilled and retainage" to "Accounts receivable trade." Billing requirements vary by contract but are generally structured around the completion of certain development, construction, or other specified milestones.

Retainage. Certain of our EPC contracts for PV solar power systems we build contain retainage provisions. Retainage represents a contract asset for the portion of the contract price earned by us for work performed, but held for payment by the customer as a form of security until we reach certain construction milestones. We consider whether collectibility of such retainage is reasonably assured in connection with our overall assessment of the collectibility of amounts due or that will become due under our EPC contracts. Retainage included within "Accounts receivable, unbilled and retainage" is expected to be billed and collected within the next 12 months. After we satisfy the EPC contract requirements and have an unconditional right to consideration, we typically bill our customer for retainage and reclassify such amount to "Accounts receivable trade."

Allowance for Credit Losses. The allowance for credit losses is a valuation account that is deducted from a financial asset's amortized cost to present the net amount we expect to collect from such asset. We estimate allowances for credit losses using relevant available information from both internal and external sources. We monitor the estimated credit losses associated with our trade accounts receivable and unbilled accounts receivable based primarily on our collection history and the delinquency status of amounts owed to us, which we determine based on the aging of such receivables. For our notes receivable, we determine estimated credit losses through an assessment of the borrower's credit quality based primarily on quarterly reviews of certain financial information, including financial statements and forecasts. We estimate credit losses associated with our marketable securities and restricted marketable securities based on the external credit rating for such investments and the historical loss rates associated with such credit ratings, which we obtain from third parties. Such methods and estimates are adjusted, as appropriate, for relevant past events, current conditions, such as the COVID-19 pandemic and related containment measures, and reasonable and supportable forecasts. We recognize writeoffs within the allowance for credit losses when cash receipts associated with our financial assets are deemed uncollectible.

Inventories – Current and Noncurrent. We report our inventories at the lower of cost or net realizable value. We determine cost on a first-in, first-out basis and include both the costs of acquisition and manufacturing in our inventory costs. These costs include direct materials, direct labor, and indirect manufacturing costs, including depreciation and amortization. Our capitalization of indirect costs is based on the normal utilization of our plants. If our plant utilization is abnormally low, the portion of our indirect manufacturing costs related to the abnormal utilization level is expensed as incurred. Other abnormal manufacturing costs, such as wasted materials or excess yield losses, are also expensed as incurred. Finished goods inventory is comprised exclusively of solar modules that have not yet been installed in a PV solar power plant under construction or sold to a third-party customer.

As needed, we may purchase a critical raw material that is used in our core production process in quantities that exceed anticipated consumption within our normal operating cycle, which is 12 months. We classify such raw materials that we do not expect to consume within our normal operating cycle as noncurrent.

We regularly review the cost of inventories, including noncurrent inventories, against their estimated net realizable value and record write-downs if any inventories have costs in excess of their net realizable values. We also regularly evaluate the quantities and values of our inventories, including noncurrent inventories, in light of current market conditions and trends, among other factors, and record write-downs for any quantities in excess of demand or for any obsolescence. This evaluation considers the use of modules in our systems business or product warranties, module selling prices, product obsolescence, strategic raw material requirements, and other factors.

Balance of Systems Parts. BoS parts represent mounting, electrical, and other parts purchased for the construction and maintenance of PV solar power systems. These parts, which are not yet installed in a system, may include posts, tilt brackets, tables, harnesses, combiner boxes, inverters, cables, tracker equipment, and other items that we may purchase or assemble for the systems we construct. We carry BoS parts at the lower of cost or net realizable value and determine their costs on a weighted-average basis. BoS parts do not include any solar modules that we manufacture.

Property, Plant and Equipment. We report our property, plant and equipment at cost, less accumulated depreciation. Cost includes the price paid to acquire or construct the assets, required installation costs, interest capitalized during the construction period, and any expenditures that substantially add to the value of or substantially extend the useful life of the assets. We capitalize costs related to computer software obtained or developed for internal use, which generally includes enterprise-level business and finance software that we customize to meet our specific operational requirements. We expense repair and maintenance costs at the time we incur them.

We begin depreciation for our property, plant and equipment when the assets are placed in service. We consider such assets to be placed in service when they are both in the location and condition for their intended use. We compute depreciation expense using the straight-line method over the estimated useful lives of assets, as presented in the table below. We depreciate leasehold improvements over the shorter of their estimated useful lives or the remaining term of the lease. The estimated useful life of an asset is reassessed whenever applicable facts and circumstances indicate a change in the estimated useful life of such asset has occurred.

	Useful Lives in Years
Buildings and building improvements	25 – 40
Manufacturing machinery and equipment	5 – 15
Furniture, fixtures, computer hardware, and computer software	3 – 7
Leasehold improvements	up to 15

PV Solar Power Systems. PV solar power systems represent project assets that we may temporarily own and operate after being placed in service. We report our PV solar power systems at cost, less accumulated depreciation. When we are entitled to incentive tax credits for our systems, we reduce the related carrying value of the assets by the amount of the tax credits, which reduces future depreciation. We begin depreciation for PV solar power systems when they are placed in service. We compute depreciation expense for the systems using the straight-line method over the shorter of the term of the related PPA or 25 years. Accordingly, our current PV solar power systems have estimated useful lives ranging from 19 to 25 years.

Project Assets. Project assets primarily consist of costs related to solar power projects in various stages of development that are capitalized prior to the completion of the sale of the project, including projects that may have begun commercial operation under PPAs and are actively marketed and intended to be sold. These project related costs include costs for land, development, and construction of a PV solar power system. Development costs may include legal, consulting, permitting, transmission upgrade, interconnection, and other similar costs. We typically classify project assets as noncurrent due to the nature of solar power projects (as long-lived assets) and the time required to complete all activities to develop, construct, and sell projects, which is typically longer than 12 months. Once we enter into a definitive sales agreement, we classify project assets as current until the sale is completed and we have recognized the sale as revenue. Any income generated by a project while it remains within project assets is accounted for as a reduction to our basis in the project. If a project is completed and begins commercial operation prior to the closing of a sales arrangement, the completed project will remain in project assets until placed in service. We present all expenditures related to the development and construction of project assets, whether fully or partially owned, as a component of cash flows from operating activities.

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

assets and adjust the carrying value to the estimated fair value, with the resulting impairment recorded within “Selling, general and administrative” expense.

Interest Capitalization. We capitalize interest as part of the historical cost of acquiring, developing, or constructing certain assets, including property, plant and equipment; project assets; and PV solar power systems. Interest capitalized for property, plant and equipment or PV solar power systems is depreciated over the estimated useful life of the related assets when they are placed in service. We charge interest capitalized for project assets to cost of sales when such assets are sold. We capitalize interest to the extent that interest has been incurred and payments have been made to acquire, construct, or develop an asset. We cease capitalization of interest for assets in development or under construction if the assets are substantially complete or if we have sold such assets.

Asset Impairments. We assess long-lived assets classified as “held and used,” including our property, plant and equipment; PV solar power systems; project assets; operating lease assets; and intangible assets, for impairment whenever events or changes in circumstances arise, including consideration of technological obsolescence, that may indicate that the carrying amount of such assets may not be recoverable. These events and changes in circumstances may include a significant decrease in the market price of a long-lived asset; a significant adverse change in the extent or manner in which a long-lived asset is being used or in its physical condition; a significant adverse change in the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; a current-period operating or cash flow loss combined with a history of such losses or a projection of future losses associated with the use of a long-lived asset; or a current expectation that, more likely than not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. For purposes of recognition and measurement of an impairment loss, long-lived assets are 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.

When impairment indicators are present, we compare 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. If the carrying value of the asset group exceeds the undiscounted future cash flows, we measure any impairment by comparing the fair value of the asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted cash flows for the asset group, (ii) third-party valuations, and/or (iii) information available regarding the current market value for such assets. If the fair value of an asset group is determined to be less than its carrying value, an impairment in the amount of the difference is recorded in the period that the impairment indicator occurs. Estimating future cash flows requires significant judgment, and such projections may vary from the cash flows eventually realized.

We consider a long-lived asset to be abandoned after we have ceased use of the asset and we have no intent to use or repurpose it in the future. Abandoned long-lived assets are recorded at their salvage value, if any.

We classify long-lived assets or asset groups we plan to sell, excluding project assets and PV solar power systems to be sold as part of our ongoing operations, as held for sale on our consolidated balance sheets only after certain criteria have been met including: (i) management has the authority and commits to a plan to sell the asset, (ii) the asset is available for immediate sale in its present condition, (iii) an active program to locate a buyer and the plan to sell the asset have been initiated, (iv) the sale of the asset is probable within 12 months, (v) the asset is being actively marketed at a reasonable sales price relative to its current fair value, and (vi) it is unlikely that the plan to sell will be withdrawn or that significant changes to the plan will be made. We record assets or asset groups held for sale at the lower of their carrying value or fair value less costs to sell. If, due to unanticipated circumstances, such assets or asset groups are not sold in the 12 months after being classified as held for sale, then held for sale classification would continue as long as the above criteria are still met.

Ventures and Variable Interest Entities. In the normal course of business, we establish wholly owned project companies which may be considered variable interest entities (“VIEs”). We consolidate wholly owned VIEs when we are considered the primary beneficiary of such entities. Additionally, we have, and may in the future form, joint

venture type arrangements, including partnerships and partially owned limited liability companies or similar legal structures, with one or more third parties primarily to develop, construct, own, and/or sell solar power projects. We analyze all of our ventures and classify them into two groups: (i) ventures that must be consolidated because they are either not VIEs and we hold a majority voting interest, or because they are VIEs and we are the primary beneficiary and (ii) ventures that do not need to be consolidated because they are either not VIEs and we hold a minority voting interest, or because they are VIEs and we are not the primary beneficiary.

Ventures are considered VIEs if (i) the total equity investment at risk is not sufficient to permit the entity to finance its activities without additional subordinated financial support; (ii) as a group, the holders of the equity investment at risk lack the ability to make certain decisions, the obligation to absorb expected losses, or the right to receive expected residual returns; or (iii) an equity investor has voting rights that are disproportionate to its economic interest and substantially all of the entity's activities are conducted on behalf of that investor. Our venture agreements typically require us to fund some form of capital for the development and construction of a project, depending upon the opportunity and the market in which our ventures are located.

We are considered the primary beneficiary of and are required to consolidate a VIE if we have the power to direct the activities that most significantly impact the VIE's economic performance and the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to the entity. If we determine that we do not have the power to direct the activities that most significantly impact the entity, then we are not the primary beneficiary of the VIE.

Equity Method Investments. We use the equity method of accounting for our investments when we have the ability to significantly influence, but not control, the operations or financial activities of the investee. As part of this evaluation, we consider our participating and protective rights in the venture as well as its legal form. We record our equity method investments at cost and subsequently adjust their carrying amount each period for our share of the earnings or losses of the investee and other adjustments required by the equity method of accounting. We present our equity method investments within "Other assets."

Distributions received from our equity method investments are recorded as reductions in the carrying value of such investments and are classified on the consolidated statements of cash flows pursuant to the cumulative earnings approach. Under this approach, distributions received are considered returns on investment and are classified as cash inflows from operating activities unless our cumulative distributions received, less distributions received in prior periods that were determined to be returns of investment, exceed our cumulative equity in earnings recognized from the investment. When such an excess occurs, the current period distributions up to this excess are considered returns of investment and are classified as cash inflows from investing activities.

We monitor equity method investments for impairment and record reductions in their carrying values if the carrying amount of an investment exceeds its fair value. An impairment charge is recorded when such impairment is deemed to be other-than-temporary. To determine whether an impairment is other-than-temporary, we consider our ability and intent to hold the investment until the carrying amount is fully recovered. Circumstances that indicate an other-than-temporary impairment may have occurred include factors such as decreases in quoted market prices or declines in the operations of the investee. The evaluation of an investment for potential impairment requires us to exercise significant judgment and to make certain assumptions. The use of different judgments and assumptions could result in different conclusions.

Goodwill. Goodwill represents the excess of the purchase price of acquired businesses over the estimated fair value assigned to the individual assets acquired and liabilities assumed. We do not amortize goodwill, but instead are required to test goodwill for impairment at least annually. We perform impairment tests between the scheduled annual test in the fourth quarter if facts and circumstances indicate that it is more likely than not that the fair value of a reporting unit that has goodwill is less than its carrying value.

We may first make a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value to determine whether it is necessary to perform a quantitative goodwill impairment test. Such qualitative impairment test considers various factors, including macroeconomic conditions, industry and market considerations, cost factors, the overall financial performance of a reporting unit, and any other relevant events affecting our company or a reporting unit. If we determine through the qualitative assessment that a reporting unit's fair value is more likely than not greater than its carrying value, the quantitative impairment test is not required. If the qualitative assessment indicates it is more likely than not that a reporting unit's fair value is less than its carrying value, we perform a quantitative impairment test. We may also elect to proceed directly to the quantitative impairment test without considering qualitative factors.

The quantitative impairment test is the comparison of the fair value of a reporting unit with its carrying amount, including goodwill. Our reporting units consist of our modules and systems businesses. We define the fair value of a reporting unit as the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. We primarily use an income approach to estimate the fair value of our reporting units. Significant judgment is required when estimating the fair value of a reporting unit, including the forecasting of future operating results and the selection of discount and expected future growth rates used to determine projected cash flows. If the estimated fair value of a reporting unit exceeds its carrying value, goodwill is not impaired, and no further analysis is required. Conversely, if the carrying value of a reporting unit exceeds its estimated fair value, we record an impairment loss equal to the excess, not to exceed the total amount of goodwill allocated to the reporting unit.

Intangible Assets. Intangible assets primarily include developed technologies, certain PPAs acquired after the associated PV solar power systems were placed in service, and our internally-generated intangible assets, substantially all of which were patents on technologies related to our products and production processes. We record an asset for patents after the patent has been issued based on the legal, filing, and other costs incurred to secure it. We amortize intangible assets on a straight-line basis over their estimated useful lives, which generally range from 10 to 20 years.

Leases. Upon commencement of a lease, we recognize a lease liability for the present value of the lease payments not yet paid, discounted using an interest rate that represents our ability to borrow on a collateralized basis over a period that approximates the lease term. We also recognize a lease asset, which represents our right to control the use of the underlying property, plant or equipment, at an amount equal to the lease liability, adjusted for prepayments and initial direct costs.

We subsequently recognize the cost of operating leases on a straight-line basis over the lease term, and any variable lease costs, which represent amounts owed to the lessor that are not fixed per the terms of the contract, are recognized in the period in which they are incurred. Any costs included in our lease arrangements that are not directly related to the leased assets, such as maintenance charges, are included as part of the lease costs. Leases with an initial term of one year or less are considered short-term leases and are not recognized as lease assets and liabilities. We also recognize the cost of such short-term leases on a straight-line basis over the term of the underlying agreement.

Many of our leases, in particular those related to systems project land, contain renewal or termination options that are exercisable at our discretion. At the commencement date of a lease, we include in the lease term any periods covered by a renewal option, and exclude from the lease term any periods covered by a termination option, to the extent we are reasonably certain to exercise such options. In making this determination, we seek to align the lease term with the expected economic life of the underlying asset.

Deferred Revenue. When we receive consideration, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, we record deferred revenue, which represents a contract liability. Such deferred revenue typically results from billings in excess of costs incurred on long-term construction contracts and advance payments received on sales of solar modules. As a

practical expedient, we do not adjust the consideration in a contract for the effects of a significant financing component when we expect, at contract inception, that the period between a customer's advance payment and our transfer of a promised product or service to the customer will be one year or less. Additionally, we do not adjust the consideration in a contract for the effects of a significant financing component when the consideration is received as a form of performance security.

Product Warranties. We provide a limited PV solar module warranty covering defects in materials and workmanship under normal use and service conditions for up to 12 years. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 98% of their labeled power output rating during the first year, with the warranty coverage reducing by a degradation factor every year thereafter throughout the limited power output warranty period of up to 30 years. Among other things, our solar module warranty also covers the resulting power output loss from cell cracking. In resolving claims under both the limited defect and power output warranties, we typically have the option of either repairing or replacing the covered modules or, under the limited power output warranty, providing additional modules to remedy the power shortfall. Our limited module warranties also include an option for us to remedy claims under such warranties, generally exercisable only after the second year of the warranty period, by making certain cash payments. Under the limited workmanship warranty, the optional cash payment will be equal to the original purchase price of the module, reduced by a degradation factor, and under the limited power output warranty, the cash payment will be equal to the shortfall in power output. Such limited module warranties are standard for module sales and may be transferred from the original purchasers of the solar modules to subsequent purchasers upon resale.

As an alternative form of our standard limited module power output warranty, we have also offered an aggregated or system-level limited module performance warranty. This system-level limited module performance warranty is designed for utility-scale systems and provides 25-year system-level energy degradation protection. This warranty represents a practical expedient to address the challenge of identifying, from the potential millions of modules installed in a utility-scale system, individual modules that may be performing below warranty thresholds by focusing on the aggregate energy generated by the system rather than the power output of individual modules. The system-level limited module performance warranty is typically calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. In resolving claims under the system-level limited module performance warranty to restore the system to warranted performance levels, we first must validate that the root cause of the issue is due to module performance; we then have the option of either repairing or replacing the covered modules, providing supplemental modules, or making a cash payment. Consistent with our limited module power output warranty, when we elect to satisfy a warranty claim by providing replacement or supplemental modules under the system-level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

In addition to our limited solar module warranties described above, for PV solar power systems we construct, we typically provide limited warranties for defects in engineering design, installation, and BoS part workmanship for a period of one to two years following the substantial completion of a system or a block within the system. In resolving claims under such BoS warranties, we have the option of remedying the defect through repair or replacement.

When we recognize revenue for module or system sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations. We make and revise these estimates based primarily on the number of solar modules under warranty installed at customer locations, our historical experience with and projections of warranty claims, and our estimated per-module replacement costs. We also monitor our expected future module performance through certain quality and reliability testing and actual performance in certain field installation sites.

Accrued Solar Module Collection and Recycling Liability. Historically, we recognized expense at the time of sale for the estimated cost of our future obligations for collecting and recycling solar modules covered by our solar module

collection and recycling program. See Note 11. “Solar Module Collection and Recycling Liability” to our consolidated financial statements for further information.

Derivative Instruments. We recognize derivative instruments on our consolidated balance sheets at their fair value. On the date that we enter into a derivative contract, we designate the derivative instrument as a fair value hedge, a cash flow hedge, a hedge of a net investment in a foreign operation, or a derivative instrument that will not be accounted for using hedge accounting methods. As of December 31, 2020 and 2019, all of our derivative instruments were designated either as cash flow hedges or as derivative instruments not accounted for using hedge accounting methods.

We record changes in the fair value of a derivative instrument that is highly effective and that is designated and qualifies as a cash flow hedge in “Accumulated other comprehensive loss” until our earnings are affected by the variability of the cash flows from the underlying hedged item. We record any amounts excluded from effectiveness testing in current period earnings in the same income statement line item in which the earnings effect of the hedged item is reported. We report changes in the fair value of derivative instruments that are not designated or do not qualify for hedge accounting in current period earnings. We classify cash flows from derivative instruments on the consolidated statements of cash flows in the same category as the item being hedged or on a basis consistent with the nature of the instrument.

At the inception of a hedge, we formally document all relationships between hedging instruments and the underlying hedged items as well as our risk-management objective and strategy for undertaking the hedge transaction. We also formally assess (both at inception and on an ongoing basis) whether our derivative instruments are highly effective in offsetting changes in the fair value or cash flows of the underlying hedged items and whether those derivatives are expected to remain highly effective in future periods. When we determine that a derivative instrument is not highly effective as a hedge, we discontinue hedge accounting prospectively. In all situations in which we discontinue hedge accounting and the derivative instrument remains outstanding, we carry the derivative instrument at its fair value on our consolidated balance sheets and recognize subsequent changes in its fair value in current period earnings.

Accumulated Other Comprehensive Income or Loss. Our accumulated other comprehensive income or loss includes foreign currency translation adjustments, unrealized gains and losses on available-for-sale debt securities, and unrealized gains and losses on derivative instruments designated and qualifying as cash flow hedges. We record these components of accumulated other comprehensive income or loss net of tax and release such tax effects when the underlying components affect earnings.

Revenue Recognition – Module Sales. We recognize revenue for module sales at a point in time following the transfer of control of such products to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts.

Revenue Recognition – Solar Power System Sales and/or EPC Services. We recognize revenue for the sale of a development project, which excludes EPC services, or for the sale of a completed system when we enter into the associated sales contract with the customer. For EPC services, or sales of solar power systems with EPC services, we recognize revenue over time as our performance creates or enhances an energy generation asset controlled by the customer. Furthermore, the sale of a solar power system combined with EPC services represents a single performance obligation for the development and construction of a single generation asset. For such arrangements, we recognize revenue and gross profit as work is performed using cost based input methods, for which we determine our progress toward contract completion based on the relationship between the actual costs incurred and the total estimated costs (including solar module costs) of the contract. Such revenue recognition is dependent, in part, on our customers’ commitment to perform their obligations under the contract, which is typically measured through the receipt of cash deposits or other forms of financial security issued by creditworthy financial institutions or parent entities.

Cost based input methods of revenue recognition are considered a faithful depiction of our efforts to satisfy long-term construction contracts and therefore reflect the transfer of goods to a customer under such contracts. Costs incurred that do not contribute to satisfying our performance obligations (i.e., "inefficient costs") are excluded from our input methods of revenue recognition as the amounts are not reflective of our transferring control of the system to the customer. Costs incurred toward contract completion may include costs associated with solar modules, direct materials, labor, subcontractors, and other indirect costs related to contract performance. We recognize solar module and direct material costs as incurred when such items are installed in a system.

Cost based input methods of revenue recognition require us to make estimates of net contract revenues and costs to complete our projects. In making such estimates, significant judgment is required to evaluate assumptions related to the amount of net contract revenues, including the impact of any performance incentives, liquidated damages, and other payments to customers. Significant judgment is also required to evaluate assumptions related to the costs to complete our projects, including materials, labor, contingencies, and other system costs. If the estimated total costs on any contract, including any inefficient costs, are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of revisions to estimates related to net contract revenues or costs to complete contracts are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. The effect of the changes on future periods are recognized as if the revised estimates had been used since revenue was initially recognized under the contract. Such revisions could occur in any reporting period, and the effects may be material depending on the size of the contracts or the changes in estimates.

As part of our solar power system sales, we conduct performance testing of a system prior to substantial completion to confirm the system meets its operational and capacity expectations noted in the EPC agreement. In addition, we may provide an energy performance test during the first or second year of a system's operation to demonstrate that the actual energy generation for the applicable period meets or exceeds the modeled energy expectation, after certain adjustments. In certain instances, a bonus payment may be received at the end of the applicable test period if the system performs above a specified level. Conversely, if there is an underperformance event with regards to these tests, we may incur liquidated damages as a percentage of the EPC contract price. Such performance guarantees represent a form of variable consideration and are estimated at contract inception at their most likely amount and updated at the end of each reporting period as additional performance data becomes available and only to the extent that it is probable that a significant reversal of any incremental revenue will not occur.

Revenue Recognition – Operations and Maintenance. We recognize revenue for standard, recurring O&M services over time as customers receive and consume the benefits of such services, which typically include 24/7 system monitoring, certain PPA and other agreement compliance, NERC compliance, large generator interconnection agreement compliance, energy forecasting, performance engineering analysis, regular performance reporting, turn-key maintenance services including spare parts and corrective maintenance repair, warranty management, and environmental services. Other ancillary O&M services, such as equipment replacement, weed abatement, landscaping, or solar module cleaning, are recognized as revenue as the services are provided to the customer. Costs of O&M services are expensed in the period in which they are incurred.

As part of our O&M service offerings, we typically offer an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a specific period after adjusting for factors outside our control as the service provider. If system availability exceeds a contractual threshold, we may receive a bonus payment, or if system availability falls below a separate threshold, we may incur liquidated damages for certain lost energy under the PPA. Such bonuses or liquidated damages represent a form of variable consideration and are estimated and recognized over time as customers receive and consume the benefits of the O&M services.

Revenue Recognition – Energy Generation. We sell energy generated by PV solar power systems under PPAs or on an open contract basis. For energy sold under PPAs, we recognize revenue each period based on the volume of energy delivered to the customer (i.e., the PPA off-taker) and the price stated in the PPA. For energy sold on an open contract basis, we recognize revenue at the point in time the energy is delivered to the grid based on the prevailing spot market prices.

Shipping and Handling Costs. We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products. Accordingly, we record amounts billed for shipping and handling costs as a component of net sales, and classify such costs as a component of cost of sales.

Taxes Collected from Customers and Remitted to Governmental Authorities. We exclude from our measurement of transaction prices all taxes assessed by governmental authorities that are both (i) imposed on and concurrent with a specific revenue-producing transaction and (ii) collected from customers. Accordingly, such tax amounts are not included as a component of net sales or cost of sales.

Research and Development. We incur research and development costs during the process of researching and developing new products and enhancing our existing products, technologies, and manufacturing processes. Our research and development costs consist primarily of employee compensation, materials, outside services, and depreciation. We expense these costs as incurred until the resulting product has been completed, tested, and made ready for commercial manufacturing.

Production Start-Up. Production start-up expense consists primarily of employee compensation and other costs associated with operating a production line before it is qualified for full production, including the cost of raw materials for solar modules run through the production line during the qualification phase and applicable facility related costs. Costs related to equipment upgrades and implementation of manufacturing process improvements are also included in production start-up expense as well as costs related to the selection of a new site, related legal and regulatory costs, and costs to maintain our plant replication program to the extent we cannot capitalize these expenditures.

Share-Based Compensation. We recognize share-based compensation expense for the estimated grant-date fair value of equity awards issued as compensation to employees over the requisite service period, which is generally four years. For awards with performance conditions, we recognize share-based compensation expense if it is probable that the performance conditions will be achieved. We account for forfeitures of share-based awards as such forfeitures occur. Accordingly, when an associate's employment is terminated, all previously unvested awards granted to such associate are forfeited, which results in a benefit to share-based compensation expense in the period of such associate's termination equal to the cumulative expense recorded through the termination date for the unvested awards. We recognize share-based compensation expense for awards with graded vesting schedules on a straight-line basis over the requisite service periods for each separately vesting portion of the award as if each award was in substance multiple awards.

Foreign Currency Translation. The functional currencies of certain of our foreign subsidiaries are their local currencies. Accordingly, we apply period-end exchange rates to translate their assets and liabilities and daily transaction exchange rates to translate their revenues, expenses, gains, and losses into U.S. dollars. We include the associated translation adjustments as a separate component of "Accumulated other comprehensive loss" within stockholders' equity. The functional currency of our subsidiaries in Canada, Chile, Malaysia, Singapore, and Vietnam is the U.S. dollar; therefore, we do not translate their financial statements. Gains and losses arising from the remeasurement of monetary assets and liabilities denominated in currencies other than a subsidiary's functional currency are included in "Foreign currency (loss) income, net" in the period in which they occur.

Income Taxes. We use the asset and liability method to account for income taxes whereby we calculate deferred tax assets or liabilities using the enacted tax rates and tax law applicable to when any temporary differences are expected to reverse. We establish valuation allowances, when necessary, to reduce deferred tax assets to the extent it is more likely than not that such deferred tax assets will not be realized. We do not provide deferred taxes related to the U.S. GAAP basis in excess of the outside tax basis in the investment in our foreign subsidiaries to the extent such amounts relate to indefinitely reinvested earnings and profits of such foreign subsidiaries.

Income tax expense includes (i) deferred tax expense, which generally represents the net change in deferred tax assets or liabilities during the year plus any change in valuation allowances, and (ii) current tax expense, which represents the amount of tax currently payable to or receivable from taxing authorities. We only recognize tax benefits related to uncertain tax positions that are more likely than not of being sustained upon examination. For those positions that satisfy such recognition criteria, the amount of tax benefit that we recognize is the largest amount of tax benefit that is more likely than not of being sustained on ultimate settlement of the uncertain tax position.

Per Share Data. Basic net income or loss per share is computed by dividing net income or loss by the weighted-average number of common shares outstanding for the period. Diluted net income per share is computed giving effect to all potentially dilutive common shares, including restricted and performance stock units and stock purchase plan shares, unless there is a net loss for the period. In computing diluted net income per share, we utilize the treasury stock method.

3. Recent Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board issued Accounting Standards Update ("ASU") 2016-13, *Financial Instruments – Credit Losses (Topic 326)*, to provide financial statement users with more useful information about expected credit losses. ASU 2016-13 replaces the historical incurred loss model with a model that reflects current expected credit losses ("CECL"), which requires consideration of a broader range of information to measure credit losses and determine the timing of when such losses are recorded. The CECL model is applicable to certain financial assets measured at amortized cost that subject us to credit risk, including cash equivalents, trade accounts receivable, unbilled accounts receivable and retainage, and notes receivable. In addition, ASU 2016-13 amended certain aspects of the accounting for available-for-sale debt securities, including the presentation of credit losses as an allowance against, rather than a write-down of, the fair value of such securities. Furthermore, a credit loss is only considered when a security is in an unrealized loss position, is limited to the difference between such security's fair value and amortized cost basis, and is recorded directly to "Other expense, net." Any remaining unrealized loss is recorded to "Accumulated other comprehensive loss" until realized.

We adopted ASU 2016-13 in the first quarter of 2020 using the modified-retrospective approach, which resulted in the recognition of an initial allowance for credit losses for our various financial assets through a cumulative-effect adjustment that decreased retained earnings by $9.2 million, net of tax, as of January 1, 2020.

See Note 5. "Cash, Cash Equivalents, and Marketable Securities," Note 6. "Restricted Marketable Securities," and Note 7. "Consolidated Balance Sheet Details" to our consolidated financial statements for further information about the allowance for credit losses associated with our various financial assets.

4. Goodwill and Intangible Assets

Goodwill

Goodwill for the relevant reporting unit consisted of the following at December 31, 2020 and 2019 (in thousands):

	December 31, 2019	Acquisitions (Impairments)	December 31, 2020
Modules	$ 407,827	$ —	$ 407,827
Accumulated impairment losses	(393,365)	—	(393,365)
Total	$ 14,462	$ —	$ 14,462

	December 31, 2018	Acquisitions (Impairments)	December 31, 2019
Modules	$ 407,827	$ —	$ 407,827
Accumulated impairment losses	(393,365)	—	(393,365)
Total	$ 14,462	$ —	$ 14,462

We performed our annual impairment analysis in the fourth quarter of 2020, 2019, and 2018. ASC 350-20 allows companies to perform a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value to determine whether it is necessary to perform a quantitative goodwill impairment test. Such qualitative assessment considers various factors, including macroeconomic conditions, industry and market considerations, cost factors, the overall financial performance of a reporting unit, and any other relevant events affecting our company or a reporting unit.

We performed a qualitative assessment for our modules reporting unit in each respective period and concluded that it was not more likely than not that the fair value of the reporting unit was less than its carrying amount. Accordingly, a quantitative goodwill impairment test for this reporting unit was not required in any period presented.

Intangible assets, net

The following tables summarize our intangible assets at December 31, 2020 and 2019 (in thousands):

	December 31, 2020		
	Gross Amount	Accumulated Amortization	Net Amount
Developed technology	$ 99,964	$ (52,115)	$ 47,849
Power purchase agreements	6,486	(1,296)	5,190
Patents	8,173	(5,074)	3,099
Total	$ 114,623	$ (58,485)	$ 56,138

	December 31, 2019		
	Gross Amount	Accumulated Amortization	Net Amount
Developed technology	$ 97,964	$ (42,344)	$ 55,620
Power purchase agreements	6,486	(972)	5,514
Patents	7,780	(4,371)	3,409
Total	$ 112,230	$ (47,687)	$ 64,543

Amortization of intangible assets was $10.8 million, $10.2 million, and $9.9 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Estimated future amortization expense for our definite-lived intangible assets was as follows at December 31, 2020 (in thousands):

	Amortization Expense
2021	$ 10,935
2022	10,911
2023	10,626
2024	10,497
2025	4,026
Thereafter	9,143
Total amortization expense	$ 56,138

5. Cash, Cash Equivalents, and Marketable Securities

Cash, cash equivalents, and marketable securities consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Cash and cash equivalents:		
Cash	$ 1,227,000	$ 1,345,419
Money market funds	2	7,322
Total cash and cash equivalents	1,227,002	1,352,741
Marketable securities:		
Foreign debt	214,254	387,820
Foreign government obligations	—	22,011
U.S. debt	14,543	66,134
Time deposits	291,269	335,541
Total marketable securities	520,066	811,506
Total cash, cash equivalents, and marketable securities	$ 1,747,068	$ 2,164,247

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within our consolidated balance sheets as of December 31, 2020 and 2019 to the total of such amounts as presented in the consolidated statements of cash flows (in thousands):

	Balance Sheet Line Item	2020	2019
Cash and cash equivalents	Cash and cash equivalents	$ 1,227,002	$ 1,352,741
Restricted cash – current	Prepaid expenses and other current assets	1,745	13,697
Restricted cash – noncurrent	Other assets	44,847	80,072
Total cash, cash equivalents, and restricted cash		$ 1,273,594	$ 1,446,510

During the year ended December 31, 2020, we sold marketable securities for proceeds of $188.1 million and realized gains of $0.2 million on such sales. During the year ended December 31, 2019, we sold marketable securities for proceeds of $52.0 million and realized no gain or loss on such sales. During the year ended December 31, 2018, we sold marketable securities for proceeds of $10.8 million and realized gains of less than $0.1 million on such sales. See Note 10. “Fair Value Measurements” to our consolidated financial statements for information about the fair value of our marketable securities.

The following tables summarize the unrealized gains and losses related to our available-for-sale marketable securities, by major security type, as of December 31, 2020 and 2019 (in thousands):

	As of December 31, 2020				
	Amortized Cost	Unrealized Gains	Unrealized Losses	Allowance for Credit Losses	Fair Value
Foreign debt	$ 213,949	$ 367	$ 46	$ 16	$ 214,254
U.S. debt	14,521	22	—	—	14,543
Time deposits	291,374	—	—	105	291,269
Total	$ 519,844	$ 389	$ 46	$ 121	$ 520,066

	As of December 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Foreign debt	$ 387,775	$ 551	$ 506	$ 387,820
Foreign government obligations	21,991	20	—	22,011
U.S. debt	65,970	176	12	66,134
Time deposits	335,541	—	—	335,541
Total	$ 811,277	$ 747	$ 518	$ 811,506

The following table presents the change in allowance for credit losses related to our available-for-sale marketable securities for the year ended December 31, 2020 (in thousands):

	Marketable Securities
Balance as of December 31, 2019	$ —
Cumulative-effect adjustment for the adoption of ASU 2016-13	207
Provision for credit losses, net	326
Sales and maturities of marketable securities	(412)
Balance as of December 31, 2020	$ 121

The contractual maturities of our marketable securities as of December 31, 2020 were as follows (in thousands):

	Fair Value
One year or less	$ 407,491
One year to two years	109,553
Two years to three years	3,022
Total	$ 520,066

6. Restricted Marketable Securities

Restricted marketable securities consisted of the following as of December 31, 2020 and 2019 (in thousands):

	2020	2019
Foreign government obligations	$ 149,700	$ 126,066
U.S. government obligations	115,580	97,719
Total restricted marketable securities	$ 265,280	$ 223,785

Our restricted marketable securities represent long-term marketable securities held in custodial accounts to fund the estimated future cost of collecting and recycling modules covered under our solar module collection and recycling program. As of December 31, 2020 and 2019, such custodial accounts also included noncurrent restricted cash

balances of $0.7 million and less than $0.1 million, respectively, which were reported within "Other assets." As necessary, we fund any incremental amounts for our estimated collection and recycling obligations on an annual basis based on the estimated costs of collecting and recycling covered modules, estimated rates of return on our restricted marketable securities, and an estimated solar module life of 25 years, less amounts already funded in prior years. We have established a trust under which estimated funds are put into custodial accounts with an established and reputable bank, for which First Solar, Inc.; First Solar Malaysia Sdn. Bhd.; and First Solar Manufacturing GmbH are grantors. Trust funds may be disbursed for qualified module collection and recycling costs (including capital and facility related recycling costs), payments to customers for assuming collection and recycling obligations, and reimbursements of any overfunded amounts. Investments in the trust must meet certain investment quality criteria comparable to highly rated government or agency bonds.

During the year ended December 31, 2020, we sold certain restricted marketable securities for proceeds of $115.2 million and realized gains of $15.1 million on such sales, and repurchased $114.5 million of restricted marketable securities as part of our ongoing management of the custodial accounts. During the years ended December 31, 2019 and 2018, we sold certain restricted marketable securities for proceeds of $281.6 million and $231.1 million, respectively, and realized gains of $40.6 million and $55.4 million, respectively, on such sales as part of an effort to align the currencies of the investments with those corresponding collection and recycling liabilities and disburse $22.2 million and $143.1 million, respectively, of overfunded amounts. See Note 10. "Fair Value Measurements" to our consolidated financial statements for information about the fair value of our restricted marketable securities.

The following tables summarize the unrealized gains and losses related to our restricted marketable securities, by major security type, as of December 31, 2020 and 2019 (in thousands):

	As of December 31, 2020				
	Amortized Cost	Unrealized Gains	Unrealized Losses	Allowance for Credit Losses	Fair Value
Foreign government obligations	$ 131,980	$ 17,720	$ —	$ —	$ 149,700
U.S. government obligations	115,648	133	188	13	115,580
Total	$ 247,628	$ 17,853	$ 188	$ 13	$ 265,280

	As of December 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Foreign government obligations	$ 129,499	$ —	$ 3,433	$ 126,066
U.S. government obligations	99,700	—	1,981	97,719
Total	$ 229,199	$ —	$ 5,414	$ 223,785

The following table represents the change in the allowance for credit losses related to our restricted marketable securities for the year ended December 31, 2020 (in thousands):

	Restricted Marketable Securities
Balance as of December 31, 2019	$ —
Cumulative-effect adjustment for the adoption of ASU 2016-13	54
Provision for credit losses, net	(16)
Sales of restricted marketable securities	(25)
Balance as of December 31, 2020	$ 13

As of December 31, 2020, the contractual maturities of our restricted marketable securities were between 9 years and 21 years.

7. Consolidated Balance Sheet Details

Accounts receivable trade, net

Accounts receivable trade, net consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Accounts receivable trade, gross	$ 269,095	$ 476,425
Allowance for credit losses	(3,009)	(1,386)
Accounts receivable trade, net	$ 266,086	$ 475,039

At December 31, 2020 and 2019, $24.4 million and $44.9 million, respectively, of our trade accounts receivable were secured by letters of credit, bank guarantees, surety bonds, or other forms of financial security issued by creditworthy financial institutions.

Accounts receivable, unbilled and retainage, net

Accounts receivable, unbilled and retainage, net consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Accounts receivable, unbilled	$ 26,673	$ 162,057
Retainage	—	21,416
Allowance for credit losses	(303)	—
Accounts receivable, unbilled and retainage, net	$ 26,370	$ 183,473

Allowance for credit losses

The following table presents the change in the allowances for credit losses related to our accounts receivable for the year ended December 31, 2020 (in thousands):

	Accounts Receivable Trade	Accounts Receivable, Unbilled and Retainage
Balance as of December 31, 2019	$ (1,386)	$ —
Cumulative-effect adjustment for the adoption of ASU 2016-13	(171)	(459)
Provision for credit losses, net (1)	(2,030)	(19)
Writeoffs	578	175
Balance as of December 31, 2020	$ (3,009)	$ (303)

(1) Includes credit losses for trade accounts receivable and unbilled accounts receivable of $2.2 million and $0.2 million, respectively, to reflect our estimate of expected credit losses attributable to the current economic conditions resulting from the ongoing COVID-19 pandemic.

Inventories

Inventories consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Raw materials	$ 292,334	$ 248,756
Work in process	64,709	59,924
Finished goods	411,773	295,479
Inventories	$ 768,816	$ 604,159
Inventories – current	$ 567,587	$ 443,513
Inventories – noncurrent	$ 201,229	$ 160,646

Prepaid expenses and other current assets

Prepaid expenses and other current assets consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Prepaid expenses	$ 160,534	$ 137,927
Prepaid income taxes	71,051	47,811
Derivative instruments (1)	3,315	1,199
Indirect tax receivables	1,827	29,908
Restricted cash	1,745	13,697
Notes receivable, net (2)	—	23,873
Other current assets	13,237	22,040
Prepaid expenses and other current assets	$ 251,709	$ 276,455

(1) See Note 8. “Derivative Financial Instruments” to our consolidated financial statements for discussion of our derivative instruments.

(2) In November 2014 and February 2016, we entered into a term loan agreement and a convertible loan agreement, respectively, with Clean Energy Collective, LLC (“CEC”). Our term loan bears interest at 16% per annum, and our convertible loan bears interest at 10% per annum. In November 2018, we amended the terms of the loan agreements to (i) extend their maturity to June 2020, (ii) waive the conversion features on our convertible loan, and (iii) increase the frequency of interest payments, subject to certain conditions.

As of December 31, 2019, the aggregate balance outstanding on the loans was $23.9 million. Upon the adoption of ASU 2016-13, we evaluated the estimated credit losses over the remaining contractual term of the loan agreements based on a discounted cash flow model. As a result of this evaluation, we recorded an allowance for credit losses of $10.8 million as of January 1, 2020. During 2020, we recorded incremental credit losses of $13.1 million due to CEC’s inability to repay the loans by their contractual maturity date, and wrote off the aggregate outstanding loan balance against the associated allowance for credit losses based on our determination that the loans are uncollectible.

Property, plant and equipment, net

Property, plant and equipment, net consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Land	$ 14,498	$ 14,241
Buildings and improvements	693,762	664,266
Machinery and equipment	2,184,236	2,436,997
Office equipment and furniture	143,685	159,848
Leasehold improvements	41,459	48,772
Construction in progress	419,766	243,107
Property, plant and equipment, gross	3,497,406	3,567,231
Accumulated depreciation	(1,095,121)	(1,386,082)
Property, plant and equipment, net	$ 2,402,285	$ 2,181,149

We assess our property, plant and equipment for impairment whenever events or changes in circumstances arise that may indicate that the carrying amount of such assets may not be recoverable. We consider a long-lived asset to be abandoned after we have ceased use of the asset and we have no intent to use or repurpose it in the future, and such abandoned assets are recorded at their salvage value, if any. During 2020, we recorded an impairment loss of $17.4 million in “Cost of sales” for certain abandoned module manufacturing equipment, including framing and assembly tools, as such equipment was no longer compatible with our long-term module technology roadmap.

Depreciation of property, plant and equipment was $198.9 million, $176.4 million, and $109.1 million for the years ended December 31, 2020, 2019, and 2018, respectively.

PV solar power systems, net

PV solar power systems, net consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
PV solar power systems, gross	$ 298,067	$ 530,004
Accumulated depreciation	(54,671)	(53,027)
PV solar power systems, net	$ 243,396	$ 476,977

Depreciation of PV solar power systems was $19.6 million, $18.7 million, and $15.3 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Project assets

Project assets consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Project assets – development costs, including project acquisition and land costs	$ 176,346	$ 254,466
Project assets – construction costs	197,031	82,654
Project assets	$ 373,377	$ 337,120
Project assets – current	$ —	$ 3,524
Project assets – noncurrent	$ 373,377	$ 333,596

Capitalized interest

The components of interest expense and capitalized interest were as follows during the years ended December 31, 2020, 2019, and 2018 (in thousands):

	2020	2019	2018
Interest cost incurred	$ (25,834)	$ (29,656)	$ (31,752)
Interest cost capitalized – project assets	1,798	2,590	5,831
Interest expense, net	$ (24,036)	$ (27,066)	$ (25,921)

Other assets

Other assets consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Operating lease assets (1)	$ 226,664	$ 145,711
Advanced payments for raw materials	97,883	59,806
Restricted cash	44,847	80,072
Accounts receivable, unbilled	22,722	—
Indirect tax receivables	14,849	9,446
Notes receivable (2)	350	8,194
Income taxes receivable	36	4,106
Other	26,779	22,591
Other assets	$ 434,130	$ 329,926

(1) See Note 9. "Leases" to our consolidated financial statements for discussion of our lease arrangements.

(2) In April 2009, we entered into a credit facility agreement with a solar power project entity of one of our customers for an available amount of €17.5 million to provide financing for a PV solar power system. The credit facility bore interest at 8.0% per annum, payable quarterly, and the full amount was due in December 2026. As of December 31, 2019, the balance outstanding on the credit facility was €7.0 million ($7.8 million). In October 2020, the project entity repaid the outstanding balance of the credit facility. The remaining notes receivable balance relates to a separate arrangement with another third party.

Assets and liabilities held for sale

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our O&M services business, we received an offer to purchase certain portions of the business and determined it is in the best interest of our stockholders to pursue this transaction. As a result, in August 2020 we entered into an agreement with Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021. Accordingly, we classified the assets and liabilities we expect to transfer to Clairvest as assets held for sale and liabilities held for sale on our consolidated balance sheet as of December 31, 2020.

Following an evaluation of the long-term cost structure, competitiveness, and risk-adjusted returns of our U.S. project development business, we have determined it is in the best interest of our stockholders to pursue the sale of this business. On January 24, 2021, we entered into an agreement with OMERS for the sale of our U.S. project development operations, which comprises the business of developing, contracting for the construction of, and selling utility-scale PV solar power systems. The transaction includes our approximately 10 GW_{AC} utility-scale solar project pipeline, including the advanced-stage Horizon, Madison, Ridgely, Rabbitbrush, and Oak Trail projects that are expected to commence construction in the next two years; the 30 MW_{AC} Barilla Solar project, which is operational; and certain other equipment. In addition, OMERS has agreed to certain module purchase commitments. The

completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from FERC, the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by CFIUS, and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021. Accordingly, we classified the assets and liabilities we expect to transfer to OMERS upon completion of this transaction as assets held for sale and liabilities held for sale on our consolidated balance sheet as of December 31, 2020.

The following table summarizes our assets and liabilities held for sale at December 31, 2020 (in thousands):

	Operations & Maintenance	Project Development	Total
Cash and cash equivalents	$ —	$ 2,037	$ 2,037
Accounts receivable trade, net	16,537	75	16,612
Accounts receivable, unbilled and retainage, net	3,687	—	3,687
Inventories	243	—	243
Balance of systems parts	72	34,173	34,245
Prepaid expenses and other current assets	12,577	1,169	13,746
Property, plant and equipment, net	5,577	215	5,792
PV solar power systems, net	—	10,997	10,997
Project assets	—	65,660	65,660
Other assets	25	2,641	2,666
Assets held for sale	$ 38,718	$ 116,967	$ 155,685
Accounts payable	$ 2,692	$ 299	$ 2,991
Accrued expenses	4,357	1,236	5,593
Deferred revenue	2,730	—	2,730
Other current liabilities	944	960	1,904
Other liabilities	4,350	8,053	12,403
Liabilities held for sale	$ 15,073	$ 10,548	$ 25,621

Accrued expenses

Accrued expenses consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Accrued project costs	$ 81,380	$ 91,971
Accrued property, plant and equipment	66,543	42,834
Accrued compensation and benefits	51,685	65,170
Accrued inventory	25,704	39,366
Product warranty liability (1)	22,278	20,291
Other	62,877	91,628
Accrued expenses	$ 310,467	$ 351,260

(1) See Note 13. “Commitments and Contingencies” to our consolidated financial statements for discussion of our “Product Warranties.”

Other current liabilities

Other current liabilities consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Other taxes payable	$ 30,041	$ 994
Operating lease liabilities (1)	14,006	11,102
Derivative instruments (2)	5,280	2,582
Contingent consideration (3)	2,243	2,395
Other	31,467	11,057
Other current liabilities	$ 83,037	$ 28,130

(1) See Note 9. "Leases" to our consolidated financial statements for discussion of our lease arrangements.

(2) See Note 8. “Derivative Financial Instruments” to our consolidated financial statements for discussion of our derivative instruments.

(3) See Note 13. “Commitments and Contingencies” to our consolidated financial statements for discussion of our “Contingent Consideration” arrangements.

Other liabilities

Other liabilities consisted of the following at December 31, 2020 and 2019 (in thousands):

	2020	2019
Operating lease liabilities (1)	$ 189,034	$ 112,515
Product warranty liability (2)	72,818	109,506
Deferred revenue	44,919	71,438
Deferred tax liabilities, net (3)	23,671	6,493
Other taxes payable	6,515	90,201
Derivative instruments (4)	341	7,439
Transition tax liability (5)	—	70,047
Contingent consideration (2)	—	4,500
Other	34,928	36,627
Other liabilities	$ 372,226	$ 508,766

(1) See Note 9. "Leases" to our consolidated financial statements for discussion of our lease arrangements.

(2) See Note 13. “Commitments and Contingencies” to our consolidated financial statements for discussion of our “Product Warranties” and “Contingent Consideration” arrangements.

(3) See Note 17. “Income Taxes” to our consolidated financial statements for discussion of our net deferred tax assets and liabilities.

(4) See Note 8. “Derivative Financial Instruments” to our consolidated financial statements for discussion of our derivative instruments.

(5) See Note 17. “Income Taxes” to our consolidated financial statements for discussion of the one-time transition tax on accumulated earnings of foreign subsidiaries as a result of the Tax Act.

8. Derivative Financial Instruments

As a global company, we are exposed in the normal course of business to interest rate, foreign currency, and commodity price risks that could affect our financial position, results of operations, and cash flows. We use derivative instruments to hedge against these risks and only hold such instruments for hedging purposes, not for speculative or trading purposes.

Depending on the terms of the specific derivative instruments and market conditions, some of our derivative instruments may be assets and others liabilities at any particular balance sheet date. We report all of our derivative instruments at fair value and account for changes in the fair value of derivative instruments within "Accumulated other comprehensive loss" if the derivative instruments qualify for hedge accounting. For those derivative instruments that do not qualify for hedge accounting (i.e., "economic hedges"), we record the changes in fair value directly to earnings. See Note 10. "Fair Value Measurements" to our consolidated financial statements for information about the techniques we use to measure the fair value of our derivative instruments.

The following tables present the fair values of derivative instruments included in our consolidated balance sheets as of December 31, 2020 and 2019 (in thousands):

	December 31, 2020		
	Prepaid Expenses and Other Current Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments:			
Foreign exchange forward contracts	$ —	$ 2,504	$ 341
Commodity swap contracts	1,478	—	—
Total derivatives designated as hedging instruments	$ 1,478	$ 2,504	$ 341
Derivatives not designated as hedging instruments:			
Foreign exchange forward contracts	$ 1,837	$ 2,776	$ —
Total derivatives not designated as hedging instruments	$ 1,837	$ 2,776	$ —
Total derivative instruments	$ 3,315	$ 5,280	$ 341

	December 31, 2019			
	Prepaid Expenses and Other Current Assets	Other Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments:				
Foreign exchange forward contracts	$ 226	$ 139	$ 369	$ 230
Total derivatives designated as hedging instruments	$ 226	$ 139	$ 369	$ 230
Derivatives not designated as hedging instruments:				
Foreign exchange forward contracts	$ 973	$ —	$ 1,807	$ —
Interest rate swap contracts	—	$ —	406	7,209
Total derivatives not designated as hedging instruments	$ 973	$ —	$ 2,213	$ 7,209
Total derivative instruments	$ 1,199	$ 139	$ 2,582	$ 7,439

The following table presents the pretax amounts related to derivative instruments designated as cash flow hedges affecting accumulated other comprehensive income (loss) and our consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Foreign Exchange Forward Contracts	Commodity Swap Contracts	Total
Balance as of December 31, 2017	$ (1,723)	$ —	$ (1,723)
Amounts recognized in other comprehensive income (loss)	(3,760)	—	(3,760)
Amounts reclassified to earnings impacting:			
Net sales	1,698	—	1,698
Cost of sales	212	—	212
Foreign currency (loss) income, net	5,448	—	5,448
Other (expense) income, net	(546)	—	(546)
Balance as of December 31, 2018	1,329	—	1,329
Amounts recognized in other comprehensive income (loss)	(1,086)	—	(1,086)
Amounts reclassified to earnings impacting:			
Net sales	(124)	—	(124)
Cost of sales	(1,081)	—	(1,081)
Balance as of December 31, 2019	(962)	—	(962)
Amounts recognized in other comprehensive income (loss)	(3,881)	1,472	(2,409)
Amounts reclassified to earnings impacting:			
Cost of sales	1,199	—	1,199
Balance as of December 31, 2020	$ (3,644)	$ 1,472	$ (2,172)

During the years ended December 31, 2020 and 2019, we recognized unrealized gains of $1.2 million and $0.8 million, respectively, within “Cost of sales” for amounts excluded from effectiveness testing for our foreign exchange forward contracts designated as cash flow hedges. During the year ended December 31, 2018, we recognized unrealized gains of $0.5 million within “Other (expense) income, net” for amounts excluded from effectiveness testing for our foreign exchange forward contracts designated as cash flow hedges. We recorded no amounts related to ineffective portions of our derivative instruments designated as cash flow hedges during the year ended December 31, 2018.

The following table presents gains and losses related to derivative instruments not designated as hedges affecting our consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

		Amount of Gain (Loss) Recognized in Income		
	Income Statement Line Item	2020	2019	2018
Interest rate swap contracts	Cost of sales	$ —	$ (1,656)	$ —
Foreign exchange forward contracts	Cost of sales	(462)	—	—
Foreign exchange forward contracts	Foreign currency (loss) income, net	(6,317)	3,716	12,113
Interest rate swap contracts	Interest expense, net	(7,259)	(8,532)	(8,643)

Interest Rate Risk

We primarily use interest rate swap contracts to mitigate our exposure to interest rate fluctuations associated with certain of our debt instruments. We do not use such swap contracts for speculative or trading purposes. During the years ended December 31, 2020, 2019, and 2018, the majority of our interest rate swap contracts related to project specific debt facilities. Such swap contracts did not qualify for accounting as cash flow hedges in accordance with ASC 815 due to our expectation to sell the associated projects before the maturity of their project specific debt

financings and corresponding swap contracts. Accordingly, changes in the fair values of these swap contracts were recorded directly to “Interest expense, net.”

In December 2019, FS Japan Project 31 GK, our indirectly wholly-owned subsidiary and project company, entered into an interest rate swap contract to hedge a portion of the floating rate term loan facility under the project’s Anamizu Credit Agreement (as defined in Note 12. “Debt” to our consolidated financial statements). Such swap had an initial notional value of ¥0.9 billion and entitled the project to receive a six-month floating Tokyo Interbank Offered Rate (“TIBOR”) plus 0.70% interest rate while requiring the project to pay a fixed rate of 1.1925%. In September 2020, we completed the sale of our Anamizu project, and its interest rate swap contract and outstanding loan balance were assumed by the customer. As of December 31, 2019, the notional value of the interest rate swap contract was ¥0.9 billion ($8.0 million).

In January 2017, FS Japan Project 12 GK, our indirect wholly-owned subsidiary and project company, entered into an interest rate swap contract to hedge a portion of the floating rate senior loan facility under the project’s Ishikawa Credit Agreement (as defined in Note 12. “Debt” to our consolidated financial statements). Such swap had an initial notional value of ¥5.7 billion and entitled the project to receive a six-month floating TIBOR plus 0.75% interest rate while requiring the project to pay a fixed rate of 1.482%. In September 2020, we repaid the remaining loan balance and settled the swap contract prior to completing the sale of our Ishikawa project. As of December 31, 2019, the notional value of the interest rate swap contract was ¥18.7 billion ($171.7 million).

Foreign Currency Risk

Cash Flow Exposure

We expect certain of our subsidiaries to have future cash flows that will be denominated in currencies other than the subsidiaries’ functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge a portion of these forecasted cash flows. As of December 31, 2020 and 2019, these foreign exchange forward contracts hedged our forecasted cash flows for periods up to 20 months and 22 months, respectively. These foreign exchange forward contracts qualify for accounting as cash flow hedges in accordance with ASC 815, and we designated them as such. We report unrealized gains or losses on such contracts in “Accumulated other comprehensive loss” and subsequently reclassify applicable amounts into earnings when the hedged transaction occurs and impacts earnings. We determined that these derivative financial instruments were highly effective as cash flow hedges as of December 31, 2020 and 2019.

As of December 31, 2020 and 2019, the notional values associated with our foreign exchange forward contracts qualifying as cash flow hedges were as follows (notional amounts and U.S. dollar equivalents in millions):

	December 31, 2020	
Currency	**Notional Amount**	**USD Equivalent**
U.S. dollar (1)	$43.4	$43.4

	December 31, 2019	
Currency	**Notional Amount**	**USD Equivalent**
U.S. dollar (1)	$69.9	$69.9

(1) These derivative instruments represent hedges of outstanding payables denominated in U.S. dollars at certain of our foreign subsidiaries whose functional currencies are other than the U.S. dollar.

In the following 12 months, we expect to reclassify to earnings $3.3 million of net unrealized loss related to foreign exchange forward contracts that are included in "Accumulated other comprehensive loss" at December 31, 2020 as we realize the earnings effects of the related forecasted transactions. The amount we ultimately record to earnings will depend on the actual exchange rates when we realize the related forecasted transactions.

Transaction Exposure and Economic Hedging

Many of our subsidiaries have assets and liabilities (primarily cash, receivables, deferred taxes, payables, accrued expenses, and solar module collection and recycling liabilities) that are denominated in currencies other than the subsidiaries' functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which these assets and liabilities are denominated will create fluctuations in our reported consolidated statements of operations and cash flows. We may enter into foreign exchange forward contracts or other financial instruments to economically hedge assets and liabilities against the effects of currency exchange rate fluctuations. The gains and losses on such foreign exchange forward contracts will economically offset all or part of the transaction gains and losses that we recognize in earnings on the related foreign currency denominated assets and liabilities.

We also enter into foreign exchange forward contracts to economically hedge balance sheet and other exposures related to transactions between certain of our subsidiaries and transactions with third parties. Such contracts are considered economic hedges and do not qualify for hedge accounting. Accordingly, we recognize gains or losses from the fluctuations in foreign exchange rates and the fair value of these derivative contracts in "Foreign currency (loss) income, net" on our consolidated statements of operations.

As of December 31, 2020 and 2019, the notional values of our foreign exchange forward contracts that do not qualify for hedge accounting were as follows (notional amounts and U.S. dollar equivalents in millions):

	December 31, 2020		
Transaction	**Currency**	**Notional Amount**	**USD Equivalent**
Purchase	Australian dollar	AUD 3.2	$2.5
Purchase	Brazilian real	BRL 2.6	$0.5
Sell	Canadian dollar	CAD 8.9	$7.0
Purchase	Chilean peso	CLP 2,006.0	$2.8
Sell	Chilean peso	CLP 4,476.7	$6.3
Purchase	Euro	€140.0	$172.1
Sell	Euro	€63.6	$78.2
Sell	Indian rupee	INR 619.2	$8.4
Purchase	Japanese yen	¥1,593.7	$15.5
Sell	Japanese yen	¥20,656.6	$200.5
Purchase	Malaysian ringgit	MYR 69.3	$17.2
Sell	Malaysian ringgit	MYR 24.9	$6.2
Sell	Mexican peso	MXN 34.6	$1.7
Purchase	Singapore dollar	SGD 2.9	$2.2

	December 31, 2019		
Transaction	**Currency**	**Notional Amount**	**USD Equivalent**
Purchase	Australian dollar	AUD 14.9	$10.4
Sell	Australian dollar	AUD 11.1	$7.8
Purchase	Brazilian real	BRL 13.2	$3.3
Sell	Brazilian real	BRL 4.3	$1.1
Purchase	Canadian dollar	CAD 4.5	$3.4
Sell	Canadian dollar	CAD 1.6	$1.2
Purchase	Chilean peso	CLP 1,493.1	$2.0
Sell	Chilean peso	CLP 3,866.1	$5.1
Purchase	Euro	€86.1	$96.5
Sell	Euro	€116.3	$130.3
Sell	Indian rupee	INR 1,283.8	$18.0
Purchase	Japanese yen	¥3,625.5	$33.3
Sell	Japanese yen	¥23,089.5	$212.2
Purchase	Malaysian ringgit	MYR 88.6	$21.6
Sell	Malaysian ringgit	MYR 41.3	$10.1
Sell	Mexican peso	MXN 34.6	$1.8
Purchase	Singapore dollar	SGD 2.9	$2.2

Commodity Price Risk

We use commodity swap contracts to mitigate our exposure to commodity price fluctuations for certain raw materials used in the production of our modules. In August 2020, we entered into a commodity swap contract to hedge a portion of our forecasted cash flows for purchases of aluminum frames for a one-year period. Such swap had an initial notional value based on metric tons of forecasted aluminum purchases, equivalent to $24.9 million, and entitled us to receive a three-month average London Metals Exchange price for aluminum while requiring us to pay certain fixed prices. The notional amount of the commodity swap contract proportionately adjusts with forecasted purchases of aluminum frames. As of December 31, 2020, the notional value associated with this contract was $12.3 million.

This commodity swap contract qualifies for accounting as a cash flow hedge in accordance with ASC 815, and we designated it as such. We report unrealized gains or losses on such contract in “Accumulated other comprehensive loss” and subsequently reclassify applicable amounts into earnings when the hedged transaction occurs and impacts earnings. We determined that this derivative financial instrument was highly effective as a cash flow hedge as of December 31, 2020. In the following 12 months, we expect to reclassify into earnings $1.5 million of net unrealized gains related to this commodity swap contract that are included in “Accumulated other comprehensive loss” at December 31, 2020 as we realize the earnings effects of the related forecasted transactions. The amount we ultimately record to earnings will depend on the actual commodity pricing when we realize the related forecasted transactions.

9. Leases

Our lease arrangements include land associated with our systems projects, our corporate and administrative offices, land for our international manufacturing facilities, and certain of our manufacturing equipment. Such leases primarily relate to assets located in the United States, Japan, Malaysia, and Vietnam.

The following table presents certain quantitative information related to our lease arrangements for the year ended December 31, 2020 and 2019, and as of December 31, 2020 and 2019 (in thousands):

	2020	2019
Operating lease cost	$ 18,739	$ 21,833
Variable lease cost	2,616	3,518
Short-term lease cost	2,628	7,511
Total lease cost	$ 23,983	$ 32,862
Payments of amounts included in the measurement of operating lease liabilities	$ 19,192	$ 21,678
Lease assets obtained in exchange for operating lease liabilities	$ 98,822	$ 179,804

	December 31, 2020	December 31, 2019
Operating lease assets	$ 226,664	$ 145,711
Operating lease liabilities – current	14,006	11,102
Operating lease liabilities – noncurrent	189,034	112,515
Weighted-average remaining lease term	20 years	15 years
Weighted-average discount rate	2.9 %	4.3 %

As of December 31, 2020, the future payments associated with our lease liabilities were as follows (in thousands):

	Total Lease Liabilities
2021	$ 17,858
2022	17,378
2023	17,483
2024	17,158
2025	16,726
Thereafter	166,168
Total future payments	252,771
Less: interest	(49,731)
Total lease liabilities	$ 203,040

Our lease expense was $18.9 million for the year ended December 31, 2018.

10. Fair Value Measurements

The following is a description of the valuation techniques that we use to measure the fair value of assets and liabilities that we measure and report at fair value on a recurring basis:

- *Cash Equivalents.* At December 31, 2020 and 2019, our cash equivalents consisted of money market funds. We value our cash equivalents using observable inputs that reflect quoted prices for securities with identical characteristics and classify the valuation techniques that use these inputs as Level 1.

- *Marketable Securities and Restricted Marketable Securities.* At December 31, 2020 and 2019, our marketable securities consisted of foreign debt, foreign government obligations, U.S. debt, and time deposits, and our restricted marketable securities consisted of foreign and U.S. government obligations. We value our marketable securities and restricted marketable securities using observable inputs that reflect quoted prices for securities with identical characteristics or quoted prices for securities with similar characteristics and other observable inputs (such as interest rates that are observable at commonly quoted intervals). Accordingly, we classify the valuation techniques that use these inputs as either Level 1 or Level 2 depending on the inputs used. We also consider the effect of our counterparties' credit standing in these fair value measurements.

- *Derivative Assets and Liabilities*. At December 31, 2020 and 2019, our derivative assets and liabilities consisted of foreign exchange forward contracts involving major currencies, interest rate swap contracts involving major interest rates, and commodity swap contracts involving major commodity prices. Since our derivative assets and liabilities are not traded on an exchange, we value them using standard industry valuation models. As applicable, these models project future cash flows and discount the amounts to a present value using market-based observable inputs, including interest rate curves, credit risk, foreign exchange rates, forward and spot prices for currencies, and forward prices for commodities. These inputs are observable in active markets over the contract term of the derivative instruments we hold, and accordingly, we classify the valuation techniques as Level 2. In evaluating credit risk, we consider the effect of our counterparties' and our own credit standing in the fair value measurements of our derivative assets and liabilities, respectively.

At December 31, 2020 and 2019, the fair value measurements of our assets and liabilities measured on a recurring basis were as follows (in thousands):

		Fair Value Measurements at Reporting Date Using		
	December 31, 2020	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Money market funds	$ 2	$ 2	$ —	$ —
Marketable securities:				
Foreign debt	214,254	—	214,254	—
U.S. debt	14,543	—	14,543	—
Time deposits	291,269	291,269	—	—
Restricted marketable securities	265,280	—	265,280	—
Derivative assets	3,315	—	3,315	—
Total assets	$ 788,663	$ 291,271	$ 497,392	$ —
Liabilities:				
Derivative liabilities	$ 5,621	$ —	$ 5,621	$ —

	December 31, 2019	Fair Value Measurements at Reporting Date Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Money market funds	$ 7,322	$ 7,322	$ —	$ —
Marketable securities:				
Foreign debt	387,820	—	387,820	—
Foreign government obligations	22,011	—	22,011	—
U.S. debt	66,134	—	66,134	—
Time deposits	335,541	335,541	—	—
Restricted marketable securities	223,785	—	223,785	—
Derivative assets	1,338	—	1,338	—
Total assets	$ 1,043,951	$ 342,863	$ 701,088	$ —
Liabilities:				
Derivative liabilities	$ 10,021	$ —	$ 10,021	$ —

Fair Value of Financial Instruments

At December 31, 2020 and 2019, the carrying values and fair values of our financial instruments not measured at fair value were as follows (in thousands):

	December 31, 2020		December 31, 2019	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets:				
Notes receivable – current	$ —	$ —	$ 23,873	$ 24,929
Notes receivable – noncurrent	350	350	8,194	10,276
Accounts receivable, unbilled – noncurrent	22,722	22,096	—	—
Liabilities:				
Long-term debt, including current maturities (1)	$ 287,149	$ 297,076	$ 482,892	$ 504,213

(1) Excludes unamortized discounts and issuance costs.

The carrying values in our consolidated balance sheets of our trade accounts receivable, current unbilled accounts receivable and retainage, restricted cash, accounts payable, and accrued expenses approximated their fair values due to their nature and relatively short maturities; therefore, we excluded them from the foregoing table. The fair value measurements for our notes receivable, noncurrent unbilled accounts receivable, and long-term debt are considered Level 2 measurements under the fair value hierarchy.

Credit Risk

We have certain financial and derivative instruments that subject us to credit risk. These consist primarily of cash, cash equivalents, marketable securities, accounts receivable, restricted cash, restricted marketable securities, notes receivable, foreign exchange forward contracts, and commodity swap contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash equivalents, marketable securities, restricted cash, restricted marketable securities, and foreign exchange forward contracts with various high-quality financial institutions and limit the amount of credit risk from any one

counterparty. We continuously evaluate the credit standing of our counterparty financial institutions. Our net sales are primarily concentrated among a limited number of customers. We monitor the financial condition of our customers and perform credit evaluations whenever considered necessary. Depending upon the sales arrangement, we may require some form of payment security from our customers, including advance payments, parent guarantees, letters of credit, bank guarantees, or surety bonds. We also have PPAs that subject us to credit risk in the event our off-take counterparties are unable to fulfill their contractual obligations, which may adversely affect our project assets and certain receivables. Accordingly, we closely monitor the credit standing of existing and potential off-take counterparties to limit such risks.

11. Solar Module Collection and Recycling Liability

We previously established a module collection and recycling program, which has since been discontinued, to collect and recycle modules sold and covered under such program once the modules reach the end of their service lives. For legacy customer sales contracts that were covered under this program, we agreed to pay the costs for the collection and recycling of qualifying solar modules, and the end-users agreed to notify us, disassemble their solar power systems, package the solar modules for shipment, and revert ownership rights over the modules back to us at the end of the modules' service lives. Accordingly, we recorded any collection and recycling obligations within "Cost of sales" at the time of sale based on the estimated cost to collect and recycle the covered solar modules.

We estimate the cost of our collection and recycling obligations based on the present value of the expected future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging materials; the cost of freight from the solar module installation sites to a recycling center; material, labor, and capital costs; and by-product credits for certain materials recovered during the recycling process. We base these estimates on our experience collecting and recycling solar modules and certain assumptions regarding costs at the time the solar modules will be collected and recycled. In the periods between the time of sale and the related settlement of the collection and recycling obligation, we accrete the carrying amount of the associated liability and classify the corresponding expense within "Selling, general and administrative" expense on our consolidated statements of operations.

We periodically review our estimates of expected future recycling costs and may adjust our liability accordingly. During the year ended December 31, 2020, we completed our annual cost study of obligations under our module collection and recycling program and reduced the associated liability by $18.9 million primarily due to changes to the estimated timing of cash flows associated with capital, labor, and maintenance costs and updates to certain valuation assumptions. During the year ended December 31, 2018, we reduced our module collection and recycling liability by $34.2 million primarily due to higher by-product credits for glass, lower capital costs resulting from the expanded scale of our recycling facilities, and adjustments to certain valuation assumptions driven by our increased experience with module recycling.

Our module collection and recycling liability was $130.7 million and $137.8 million as of December 31, 2020 and 2019, respectively. During the year ended December 31, 2020, we recognized a net benefit of $18.9 million to cost of sales as a result of the reduction to our module and collection recycling liability described above and accretion expense of $5.2 million associated with this liability. During the year ended December 31, 2019, we recognized accretion expense of $4.9 million associated with this liability. During the year ended December 31, 2018, we recognized net benefits of $25.0 million to cost of sales and $2.9 million to accretion expense as a result of the reduction in our module collection and recycling liability. As of December 31, 2020, a 1% increase in the annualized inflation rate used in our estimated future collection and recycling cost per module would increase the liability by $21.6 million, and a 1% decrease in that rate would decrease the liability by $18.7 million. See Note 6. "Restricted Marketable Securities" to our consolidated financial statements for more information about our arrangements for funding this liability.

12. Debt

Our long-term debt consisted of the following at December 31, 2020 and 2019 (in thousands):

Loan Agreement	Currency	Balance (USD) 2020	Balance (USD) 2019
Revolving Credit Facility	USD	$ —	$ —
Luz del Norte Credit Facilities	USD	186,230	188,017
Ishikawa Credit Agreement	JPY	—	215,879
Japan Credit Facility	JPY	13,813	1,678
Tochigi Credit Facility	JPY	39,400	37,304
Anamizu Credit Agreement	JPY	—	12,138
Kyoto Credit Facility	JPY	47,706	—
Anantapur Credit Facility	INR	—	15,123
Tungabhadra Credit Facility	INR	—	12,753
Long-term debt principal		287,149	482,892
Less: unamortized discounts and issuance costs		(7,918)	(11,195)
Total long-term debt		279,231	471,697
Less: current portion		(41,540)	(17,510)
Noncurrent portion		$ 237,691	$ 454,187

Revolving Credit Facility

Our amended and restated credit agreement with several financial institutions as lenders and JPMorgan Chase Bank, N.A. as administrative agent provides us with a senior secured credit facility (the "Revolving Credit Facility") with an aggregate borrowing capacity of $500.0 million, which we may increase to $750.0 million, subject to certain conditions. Borrowings under the credit facility bear interest at (i) London Interbank Offered Rate ("LIBOR"), adjusted for Eurocurrency reserve requirements, plus a margin of 2.00% or (ii) a base rate as defined in the credit agreement plus a margin of 1.00% depending on the type of borrowing requested. These margins are also subject to adjustment depending on our consolidated leverage ratio. We had no borrowings under our Revolving Credit Facility as of December 31, 2020 and 2019 and had issued $4.3 million and $39.3 million, respectively, of letters of credit using availability under the facility. Loans and letters of credit issued under the Revolving Credit Facility are jointly and severally guaranteed by First Solar, Inc.; First Solar Electric, LLC; First Solar Electric (California), Inc.; and First Solar Development, LLC and are secured by interests in substantially all of the guarantors' tangible and intangible assets other than certain excluded assets.

In addition to paying interest on outstanding principal under the Revolving Credit Facility, we are required to pay a commitment fee at a rate of 0.30% per annum, based on the average daily unused commitments under the facility, which may also be adjusted due to changes in our consolidated leverage ratio. We also pay a letter of credit fee based on the applicable margin for Eurocurrency revolving loans on the face amount of each letter of credit and a fronting fee of 0.125%. Our Revolving Credit Facility matures in July 2022.

Luz del Norte Credit Facilities

In August 2014, Parque Solar Fotovoltaico Luz del Norte SpA ("Luz del Norte"), our indirect wholly-owned subsidiary and project company, entered into credit facilities (the "Luz del Norte Credit Facilities") with the U.S. International Development Finance Corporation ("DFC") and the International Finance Corporation ("IFC") to provide limited-recourse senior secured debt financing for the design, development, financing, construction, testing, commissioning, operation, and maintenance of a 141 MW_{AC} PV solar power plant located near Copiapó, Chile.

In March 2017, we amended the terms of the DFC and IFC credit facilities. Such amendments (i) allowed for the capitalization of accrued and unpaid interest through March 15, 2017, along with the capitalization of certain future

interest payments as variable rate loans under the credit facilities, (ii) allowed for the conversion of certain fixed rate loans to variable rate loans upon scheduled repayment, (iii) extended the maturity of the DFC and IFC loans until June 2037, and (iv) canceled the remaining borrowing capacity under the DFC and IFC credit facilities with the exception of the capitalization of certain future interest payments. As of December 31, 2020 and 2019, the balance outstanding on the DFC loans was $139.4 million and $140.8 million, respectively. As of December 31, 2020 and 2019, the balance outstanding on the IFC loans was $46.8 million and $47.2 million, respectively. The DFC and IFC loans are secured by liens over all of Luz del Norte's assets and by a pledge of all of the equity interests in the entity.

Ishikawa Credit Agreement

In December 2016, FS Japan Project 12 GK ("Ishikawa"), our indirect wholly-owned subsidiary and project company, entered into a credit agreement (the "Ishikawa Credit Agreement") with Mizuho Bank, Ltd. for aggregate borrowings up to ¥27.3 billion ($233.9 million) for the development and construction of a 59 MW_{AC} PV solar power plant located in Ishikawa, Japan. The credit agreement consists of a ¥24.0 billion ($205.6 million) senior loan facility, a ¥2.1 billion ($18.0 million) consumption tax facility, and a ¥1.2 billion ($10.3 million) letter of credit facility. In September 2020, we repaid the remaining $215.5 million principal balance on the credit agreement prior to completing the sale of the project.

Japan Credit Facility

In September 2015, First Solar Japan GK, our wholly-owned subsidiary, entered into a construction loan facility with Mizuho Bank, Ltd. for borrowings up to ¥4.0 billion ($33.4 million) for the development and construction of utility-scale PV solar power plants in Japan (the "Japan Credit Facility"). Borrowings under the facility generally mature within 12 months following the completion of construction activities for each financed project. The facility is guaranteed by First Solar, Inc. and secured by pledges of certain projects' cash accounts and other rights in the projects.

Tochigi Credit Facility

In June 2017, First Solar Japan GK, our wholly-owned subsidiary, entered into a term loan facility with Mizuho Bank, Ltd. for borrowings up to ¥7.0 billion ($62.2 million) for the development of utility-scale PV solar power plants in Japan (the "Tochigi Credit Facility"). The term loan facility matures in March 2021. The facility is guaranteed by First Solar, Inc. and secured by pledges of certain of First Solar Japan GK's accounts.

Anamizu Credit Agreement

In December 2019, FS Japan Project 31 GK ("Anamizu"), our indirect wholly-owned subsidiary and project company, entered into a credit agreement (the "Anamizu Credit Agreement") with MUFG Bank, Ltd.; The Iyo Bank, Ltd.; The Hachijuni Bank, Ltd.; The Hyakugo Bank, Ltd.; and The Yamagata Bank, Ltd. for aggregate borrowings up to ¥7.7 billion ($70.8 million) for the development and construction of a 17 MW_{AC} PV solar power plant located in Ishikawa, Japan. The credit agreement consisted of a ¥6.6 billion ($61.0 million) term loan facility, a ¥0.7 billion ($6.5 million) consumption tax facility, and a ¥0.4 billion ($3.3 million) debt service reserve facility. In September 2020, we completed the sale of our Anamizu project, and the outstanding balance of the Anamizu Credit Agreement of $31.3 million was assumed by the customer.

Miyagi Credit Facility

In July 2020, GK Marumori Hatsudensho ("Miyagi"), our indirectly wholly-owned subsidiary and project company, entered into a credit agreement (the "Miyagi Credit Facility") with Shinsei Bank, Ltd. for aggregate borrowings up to ¥17.2 billion ($164.2 million) for the development and construction of a 40 MW_{AC} PV solar power plant located in Miyagi, Japan. The credit facility consisted of a ¥15.2 billion ($145.1 million) term loan facility, a ¥1.5 billion ($14.4 million) consumption tax facility, and a ¥0.5 billion ($4.7 million) debt service reserve facility. In

September 2020, we completed the sale of our Miyagi project, and the outstanding balance of the Miyagi Credit Facility of $79.4 million was assumed by the customer.

Kyoto Credit Facility

In July 2020, First Solar Japan GK, our wholly-owned subsidiary, entered into a construction loan facility with Mizuho Bank, Ltd. for borrowings up to ¥15.0 billion ($142.8 million), which are intended to be used for the construction of a 38 MW_{AC} PV solar power plant located in Kyoto, Japan (the "Kyoto Credit Facility"). Borrowings under the facility generally mature within 12 months following the completion of construction activities at the project. The facility is guaranteed by First Solar, Inc. and First Solar Japan GK, our wholly-owned subsidiary, and secured by pledges of the project's cash accounts and certain other assets.

Anantapur Credit Facility

In March 2018, Anantapur Solar Parks Private Limited, our indirect wholly-owned subsidiary and project company, entered into a term loan facility (the "Anantapur Credit Facility") with J.P. Morgan Securities India Private Limited for borrowings up to INR 1.2 billion ($18.4 million) for costs related to a 20 MW_{AC} PV solar power plant located in Karnataka, India. In July 2020, we completed the sale of our Anantapur project, and the outstanding balance of the Anantapur Credit Facility of $14.0 million was assumed by the customer.

Tungabhadra Credit Facility

In March 2018, Tungabhadra Solar Parks Private Limited, our indirect wholly-owned subsidiary and project company, entered into a term loan facility (the "Tungabhadra Credit Facility") with J.P. Morgan Securities India Private Limited for borrowings up to INR 1.0 billion ($15.3 million) for costs related to a 20 MW_{AC} PV solar power plant located in Karnataka, India. In July 2020, we completed the sale of our Tungabhadra project, and the outstanding balance of the Tungabhadra Credit Facility of $12.0 million was assumed by the customer.

Variable Interest Rate Risk

Certain of our long-term debt agreements bear interest at prime, LIBOR, TIBOR, or equivalent variable rates. An increase in these variable rates would increase the cost of borrowing under our Revolving Credit Facility and certain project specific debt financings. Our long-term debt borrowing rates as of December 31, 2020 were as follows:

Loan Agreement	December 31, 2020
Revolving Credit Facility	2.14%
Luz del Norte Credit Facilities (1)	Fixed rate loans at bank rate plus 3.50% Variable rate loans at 91-Day U.S. Treasury Bill Yield or LIBOR plus 3.50%
Japan Credit Facility	1-month TIBOR plus 0.55%
Tochigi Credit Facility	3-month TIBOR plus 1.00%
Kyoto Credit Facility	1-month TIBOR plus 0.60%

(1) Outstanding balance comprised of $144.2 million of fixed rate loans and $42.0 million of variable rate loans as of December 31, 2020.

During the years ended December 31, 2020, 2019, and 2018, we paid $14.9 million, $18.8 million, and $16.6 million, respectively, of interest related to our long-term debt arrangements.

Future Principal Payments

At December 31, 2020, the future principal payments on our long-term debt were due as follows (in thousands):

	Total Debt
2021	$ 41,801
2022	17,848
2023	6,084
2024	54,727
2025	7,560
Thereafter	159,129
Total long-term debt future principal payments	$ 287,149

13. Commitments and Contingencies

Commercial Commitments

During the normal course of business, we enter into commercial commitments in the form of letters of credit and surety bonds to provide financial and performance assurance to third parties. As of December 31, 2020, the majority of these commercial commitments supported our systems projects. As of December 31, 2020, the issued and outstanding amounts and available capacities under these commitments were as follows (in millions):

	Issued and Outstanding	Available Capacity
Revolving Credit Facility (1)	$ 4.3	$ 395.7
Bilateral facilities (2)	135.5	270.5
Surety bonds	67.0	649.9

(1) Our Revolving Credit Facility provides us with a sub-limit of $400.0 million to issue letters of credit, subject to certain additional limits depending on the currencies of the letters of credit, at a fee based on the applicable margin for Eurocurrency revolving loans and a fronting fee.

(2) Of the total letters of credit issued under the bilateral facilities, $1.2 million was secured with cash.

Product Warranties

When we recognize revenue for module or system sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations for both modules and the balance of the systems. We make and revise these estimates based primarily on the number of solar modules under warranty installed at customer locations, our historical experience with and projections of warranty claims, and our estimated per-module replacement costs. We also monitor our expected future module performance through certain quality and reliability testing and actual performance in certain field installation sites. From time to time, we have taken remediation actions with respect to affected modules beyond our limited warranties and may elect to do so in the future, in which case we would incur additional expenses. Such potential voluntary future remediation actions beyond our limited warranty obligations may be material to our consolidated statements of operations if we commit to any such remediation actions.

Product warranty activities during the years ended December 31, 2020, 2019, and 2018 were as follows (in thousands):

	2020	2019	2018
Product warranty liability, beginning of period	$ 129,797	$ 220,692	$ 224,274
Accruals for new warranties issued	9,424	17,327	14,132
Settlements	(22,464)	(22,540)	(11,851)
Changes in estimate of product warranty liability	(21,661)	(85,682)	(5,863)
Product warranty liability, end of period	$ 95,096	$ 129,797	$ 220,692
Current portion of warranty liability	$ 22,278	$ 20,291	$ 27,657
Noncurrent portion of warranty liability	$ 72,818	$ 109,506	$ 193,035

We estimate our limited product warranty liability for power output and defects in materials and workmanship under normal use and service conditions based on return rates for each series of module technology. During the year ended December 31, 2020, we revised this estimate downward based on updated information regarding our warranty claims, which reduced our product warranty liability by $19.7 million. This updated information reflected lower-than-expected settlements for our older series of module technology and revisions to projected settlements, resulting in a lower projected return rate. During the year ended December 31, 2019, we revised this estimate downward based on updated information regarding our warranty claims, which reduced our product warranty liability by $80.0 million. This updated information reflected lower-than-expected return rates for our newer series of module technology, the evolving claims profile of each series, and certain changes to our warranty programs.

In general, we expect the return rates for our newer series of module technology to be lower than our older series. We estimate that the return rate for such newer series of module technology will be less than 1%. As of December 31, 2020, a 1% increase in the return rate across all series of module technology would increase our product warranty liability by $104.9 million, and a 1% increase in the return rate for BoS parts would not have a material impact on the associated warranty liability.

Performance Guarantees

As part of our systems business, we conduct performance testing of a system prior to substantial completion to confirm the system meets its operational and capacity expectations noted in the EPC agreement. In addition, we may provide an energy performance test during the first or second year of a system's operation to demonstrate that the actual energy generation for the applicable period meets or exceeds the modeled energy expectation, after certain adjustments. If there is an underperformance event with regard to these tests, we may incur liquidated damages as specified in the applicable EPC agreement. In certain instances, a bonus payment may be received at the end of the applicable test period if the system performs above a specified level. As of December 31, 2020 and 2019, we accrued $10.2 million and $4.6 million, respectively, for our estimated obligations under such arrangements, which were classified as "Other current liabilities" in our consolidated balance sheets.

As part of our O&M service offerings, we typically offer an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a specific period after adjusting for factors outside our control as the service provider, such as weather, curtailment, outages, force majeure, and other conditions that may affect system availability. Effective availability guarantees are only offered as part of our O&M services and terminate at the end of an O&M arrangement. If we fail to meet the contractual threshold for these guarantees, we may incur liquidated damages for certain lost energy. Our O&M agreements typically contain provisions limiting our total potential losses under an agreement, including amounts paid for liquidated damages, to a percentage of O&M fees. Many of our O&M agreements also contain provisions whereby we may receive a bonus payment if system availability exceeds a separate threshold. As of December 31, 2020, we accrued $0.9 million of liquidated damages under our effective availability guarantees, which was classified as "Liabilities held for sale" in our consolidated balance sheets. As of December 31, 2019, we accrued $0.6 million of

liquidated damages under our effective availability guarantees, which was classified as “Other current liabilities” in our consolidated balance sheets.

Indemnifications

In certain limited circumstances, we have provided indemnifications to customers, including project tax equity investors, under which we are contractually obligated to compensate such parties for losses they suffer resulting from a breach of a representation, warranty, or covenant; a reduction in tax benefits received, including investment tax credits; or the resolution of specific matters associated with a project’s development or construction. Project related tax benefits are, in part, based on guidance provided by the Internal Revenue Service and U.S. Treasury Department, which includes assumptions regarding the fair value of qualifying PV solar power systems. For any sales contracts that have such indemnification provisions, we initially recognize a liability under ASC 460 for the estimated premium that would be required by a guarantor to issue the same indemnity in a standalone arm’s-length transaction with an unrelated party. We typically base these estimates on the cost of insurance policies that cover the underlying risks being indemnified and may purchase such policies to mitigate our exposure to potential indemnification payments. We subsequently measure such liabilities at the greater of the initially estimated premium or the contingent liability required to be recognized under ASC 450. We recognize any indemnification liabilities as a reduction of revenue in the related transaction.

After an indemnification liability is recorded, we derecognize such amount pursuant to ASC 460-10-35-2 depending on the nature of the indemnity, which derecognition typically occurs upon expiration or settlement of the arrangement, and any contingent aspects of the indemnity are accounted for in accordance with ASC 450. As of December 31, 2020 and 2019, we accrued $3.2 million and $0.8 million of current indemnification liabilities, respectively. As of December 31, 2019, we also accrued $4.2 million of noncurrent indemnification liabilities. As of December 31, 2020, the maximum potential amount of future payments under our tax related and other indemnifications was $181.9 million, and we held insurance policies allowing us to recover up to $43.8 million of potential amounts paid under the indemnifications covered by the policies.

Contingent Consideration

We may seek to make additions to our advanced-stage project pipeline by actively developing our early-to-mid-stage project pipeline and by pursuing opportunities to acquire projects at various stages of development. In connection with such project acquisitions, we may agree to pay additional amounts to project sellers upon the achievement of certain milestones, such as obtaining a PPA, obtaining financing, or selling the project to a new owner. We recognize a project acquisition contingent liability when we determine that such a liability is both probable and reasonably estimable, and the carrying amount of the related project asset is correspondingly increased. As of December 31, 2020 and 2019, we accrued $2.2 million and $2.4 million, respectively, for project related contingent obligations, which was classified as “Other current liabilities” in our consolidated balance sheets. As of December 31, 2020 and 2019, we also accrued $4.5 million for project related contingent obligations, which was classified as “Liabilities held for sale” and “Other liabilities,” respectively, in our consolidated balance sheets. Any future differences between the acquisition-date contingent obligation estimate and the ultimate settlement of the obligation are recognized as an adjustment to the project asset, as contingent payments are considered direct and incremental to the underlying value of the related project.

Legal Proceedings

Class Action

On March 15, 2012, a purported class action lawsuit titled Smilovits v. First Solar, Inc., et al., Case No. 2:12-cv-00555-DGC, was filed in the Arizona District Court against the Company and certain of our current and former directors and officers. The complaint was filed on behalf of persons who purchased or otherwise acquired the Company’s publicly traded securities between April 30, 2008 and February 28, 2012. The complaint generally

alleged that the defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 by making false and misleading statements regarding the Company's financial performance and prospects. The action included claims for damages, including interest, and an award of reasonable costs and attorneys' fees to the putative class.

On July 23, 2012, the Arizona District Court issued an order appointing as lead plaintiffs in the Class Action the Mineworkers' Pension Scheme and British Coal Staff Superannuation Scheme (collectively, the "Pension Schemes"). The Pension Schemes filed an amended complaint on August 17, 2012, which contains similar allegations and seeks similar relief as the original complaint. Defendants filed a motion to dismiss on September 14, 2012. On December 17, 2012, the court denied defendants' motion to dismiss. On October 8, 2013, the Arizona District Court granted the Pension Schemes' motion for class certification and certified a class comprised of all persons who purchased or otherwise acquired publicly traded securities of the Company between April 30, 2008 and February 28, 2012 and were damaged thereby, excluding defendants and certain related parties. Merits discovery closed on February 27, 2015.

Defendants filed a motion for summary judgment on March 27, 2015. On August 11, 2015, the Arizona District Court granted defendants' motion in part and denied it in part, and certified an issue for immediate appeal to the Ninth Circuit Court of Appeals (the "Ninth Circuit"). First Solar filed a petition for interlocutory appeal with the Ninth Circuit, and that petition was granted on November 18, 2015. On May 20, 2016, the Pension Schemes moved to vacate the order granting the petition, dismiss the appeal, and stay the merits briefing schedule. On December 13, 2016, the Ninth Circuit denied the Pension Schemes' motion. On January 31, 2018, the Ninth Circuit issued an opinion affirming the Arizona District Court's order denying in part defendants' motion for summary judgment. On March 16, 2018, First Solar filed a petition for panel rehearing or rehearing en banc with the Ninth Circuit. On May 7, 2018, the Ninth Circuit denied defendants' petition. On August 6, 2018, defendants filed a petition for writ of certiorari to the U.S. Supreme Court. Meanwhile, in the Arizona District Court, expert discovery was completed on February 5, 2019. On June 24, 2019, the U.S. Supreme Court denied the petition. Following the denial of the petition, the Arizona District Court ordered that the trial begin on January 7, 2020.

On January 5, 2020, First Solar entered into an MOU to settle the Class Action. First Solar agreed to pay a total of $350 million to settle the claims in the Class Action brought on behalf of all persons who purchased or otherwise acquired the Company's shares between April 30, 2008 and February 28, 2012, in exchange for mutual releases and a dismissal with prejudice of the complaint upon court approval of the settlement. The settlement contained no admission of liability, wrongdoing, or responsibility by any of the parties. As a result of the entry into the MOU, we accrued a loss for the above-referenced settlement in our results of operations for the year ended December 31, 2019. On January 24, 2020, First Solar paid $350 million to the settlement escrow agent. On February 13, 2020, First Solar entered into a stipulation of settlement with certain named plaintiffs on terms and conditions that are consistent with the MOU. On February 14, 2020, the lead plaintiffs filed a motion for preliminary approval of the settlement. Following a February 27, 2020 hearing, the Arizona District Court entered an order on March 2, 2020 that granted preliminary approval of the settlement and permitted notice to the class. Following a June 30, 2020 hearing, the Arizona District Court entered an order on June 30, 2020 that granted final approval of the settlement and dismissed the Class Action with prejudice.

Opt-Out Action

On June 23, 2015, a suit titled Maverick Fund, L.D.C. v. First Solar, Inc., et al., Case No. 2:15-cv-01156-ROS, was filed in Arizona District Court by putative stockholders that opted out of the Class Action. The complaint names the Company and certain of our current and former directors and officers as defendants, and alleges that the defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, and violated state law, by making false and misleading statements regarding the Company's financial performance and prospects. The action includes claims for rescissory and actual damages, interest, punitive damages, and an award of reasonable attorneys' fees, expert fees, and costs.

First Solar and the individual defendants filed a motion to dismiss the Opt-Out Action on July 16, 2018. On November 27, 2018, the Court granted defendants' motion to dismiss the plaintiffs' negligent misrepresentation claim under state law, but otherwise denied defendants' motion. On June 3, 2020, First Solar and the plaintiffs in the Opt-Out Action entered into an agreement in principle to settle the claims in the Opt-Out Action. On July 17, 2020, the parties executed a definitive settlement agreement pursuant to which First Solar agreed to pay a total of $19 million in exchange for mutual releases and a dismissal with prejudice of the Opt-Out Action. The agreement contains no admission of liability, wrongdoing, or responsibility by any of the defendants. On July 30, 2020, First Solar funded the settlement, and on July 31, 2020, the parties filed a joint stipulation of dismissal. On September 10, 2020, the Arizona District Court entered an order dismissing the case with prejudice. As of December 31, 2019, we accrued $13 million of estimated losses for this action. As a result of the settlement, we accrued an incremental $6 million litigation loss during the year ended December 31, 2020.

Derivative Actions

On July 16, 2013, a derivative complaint was filed in the Superior Court of Arizona, Maricopa County, formerly titled Bargar, et al. v. Ahearn, et al., and now titled Kaufold v. Ahearn, et. al., Case No. CV2013-009938, by a putative stockholder against certain current and former directors and officers of the Company ("Kaufold"). The complaint generally alleges that the defendants caused or allowed false and misleading statements to be made concerning the Company's financial performance and prospects. The action includes claims for, among other things, breach of fiduciary duties, insider trading, unjust enrichment, and waste of corporate assets. By court order on October 3, 2013, the Superior Court of Arizona, Maricopa County granted the parties' stipulation to defer defendants' response to the complaint pending resolution of the Class Action or expiration of a stay issued in certain consolidated derivative actions in the Arizona District Court. On November 5, 2013, the matter was placed on the court's inactive calendar. The parties jointly sought and obtained multiple requests to continue the stay in this action. On June 30, 2020, the parties jointly requested that the stay be lifted. On July 1, 2020, the Superior Court of Arizona, Maricopa County ordered that the stay be lifted. On July 14, 2020, defendants filed a motion to dismiss the complaint with prejudice. On September 14, 2020, First Solar and the plaintiff entered into an agreement in principle to settle the claims in the Kaufold action, providing for, among other things, payment of the plaintiff's attorney's fees in an immaterial sum. On October 28, 2020 the parties executed a Stipulation and Agreement of Settlement on terms and conditions that are consistent with the September 14, 2020 agreement in principle. The stipulation contains no admission of liability, wrongdoing, or responsibility by any of the defendants. On October 30, 2020, the plaintiff filed a motion for preliminary approval of the settlement, and on November 6, 2020, the court entered an order that granted preliminary approval of the settlement and permitted notice. Following a December 1, 2020 hearing, the court entered a Final Order and Judgment that granted final approval of the settlement and dismissed the case with prejudice.

Other Matters and Claims

We are party to other legal matters and claims in the normal course of our operations. While we believe the ultimate outcome of such other matters and claims will not have a material adverse effect on our financial position, results of operations, or cash flows, the outcome of such matters and claims is not determinable with certainty, and negative outcomes may adversely affect us.

14. Revenue from Contracts with Customers

The following table presents the disaggregation of revenue from contracts with customers for the years ended December 31, 2020, 2019, and 2018 along with the reportable segment for each category (in thousands):

Category	Segment	2020	2019	2018
Solar modules	Modules	$ 1,736,060	$ 1,460,116	$ 502,001
Solar power systems	Systems	794,797	1,148,856	1,244,175
O&M services	Systems	115,590	107,705	103,186
Energy generation (1)	Systems	61,948	54,539	47,122
EPC services	Systems	2,937	291,901	347,560
Net sales		$ 2,711,332	$ 3,063,117	$ 2,244,044

(1) During the year ended December 31, 2020, the majority of energy generated and sold by our PV solar power systems was accounted for under ASC 840 consistent with the classification of the associated PPAs.

We recognize revenue for module sales at a point in time following the transfer of control of the modules to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts. Such contracts may contain provisions that require us to make liquidated damage payments to the customer if we fail to ship or deliver modules by scheduled dates. We recognize these liquidated damages as a reduction of revenue in the period we transfer control of the modules to the customer.

For EPC services, or sales of solar power systems with EPC services, we recognize revenue over time using cost based input methods, in which significant judgment is required to evaluate assumptions including the amount of net contract revenues and the total estimated costs to determine our progress toward contract completion. If the estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of revisions to estimates related to net contract revenues or costs to complete contracts are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated.

Changes in estimates for sales of systems and EPC services occur for a variety of reasons, including but not limited to (i) construction plan accelerations or delays, (ii) module cost forecast changes, (iii) cost related change orders, or (iv) changes in other information used to estimate costs. Changes in estimates may have a material effect on our consolidated statements of operations.

The following table outlines the impact on revenue of net changes in estimated transaction prices and input costs for systems related sales contracts (both increases and decreases) for the years ended December 31, 2020, 2019, and 2018 as well as the number of projects that comprise such changes. For purposes of the table, we only include projects with changes in estimates that have a net impact on revenue of at least $1.0 million during the periods presented with the exception of the sales and use tax matter described below, for which the aggregate change in estimate has been presented. Also included in the table is the net change in estimate as a percentage of the aggregate revenue for such projects.

	2020	2019	2018
Number of projects (1)	9	3	24
(Decrease) increase in revenue from net changes in transaction prices (in thousands) (1)	$ (16,954)	$ (3,642)	$ 63,361
Increase (Decrease) in revenue from net changes in input cost estimates (in thousands)	7,487	(23,103)	1,548
Net (decrease) increase in revenue from net changes in estimates (in thousands)	$ (9,467)	$ (26,745)	$ 64,909
Net change in estimate as a percentage of aggregate revenue	(0.5)%	(4.6)%	0.6 %

(1) During the year ended December 31, 2018, we settled a tax examination with the state of California regarding several matters, including certain sales and use tax payments due under lump sum EPC contracts. Accordingly, we revised our estimates of sales and use taxes due for projects in the state of California, which affected the estimated transaction prices for such contracts, and recorded an increase to revenue of $54.6 million.

The following table reflects the changes in our contract assets, which we classify as “Accounts receivable, unbilled” or “Retainage,” and our contract liabilities, which we classify as “Deferred revenue,” for the year ended December 31, 2020, excluding any assets or liabilities classified as held for sale as of December 31, 2020 (in thousands):

	2020	2019	Change	
Accounts receivable, unbilled (1)	$ 49,395	$ 162,057		
Retainage	—	21,416		
Allowance for credit losses	(303)	—		
Accounts receivable, unbilled and retainage, net	$ 49,092	$ 183,473	$ (134,381)	(73)%
Deferred revenue (2)	$ 233,732	$ 394,655	$ (160,923)	(41)%

(1) Includes $22.7 million of noncurrent accounts receivable, unbilled classified as “Other assets” on our consolidated balance sheet as of December 31, 2020.

(2) Includes $44.9 million and $71.4 million of noncurrent deferred revenue classified as “Other liabilities” on our consolidated balance sheets as of December 31, 2020 and 2019, respectively.

During the year ended December 31, 2020, our contract assets decreased by $134.4 million primarily due to billings associated with ongoing construction activities at the GA Solar 4, Sun Streams, and Sunshine Valley projects, partially offset by unbilled receivables associated with the sale of certain systems projects. During the year ended December 31, 2020, our contract liabilities decreased by $160.9 million primarily due to the recognition of revenue for sales of solar modules for which payment was received in 2019 prior to the step down in the U.S. investment tax credit from 30% to 26%, partially offset by advance payments received for sales of solar modules in the current period. During the years ended December 31, 2020 and 2019, we recognized revenue of $316.1 million and $117.7 million, respectively, that was included in the corresponding contract liability balance at the beginning of the periods.

As of December 31, 2020, we had entered into contracts with customers for the future sale of 10.7 GW_{DC} of solar modules for an aggregate transaction price of $3.3 billion. We expect to recognize such amounts as revenue through 2023 as we transfer control of the modules to the customers. While our contracts with customers typically represent firm purchase commitments, these contracts may be subject to amendments made by us or requested by our customers. These amendments may increase or decrease the volume of modules to be sold under the contract, change delivery schedules, or otherwise adjust the expected revenue under these contracts. As of December 31, 2020, we had entered into O&M contracts covering approximately 900 MW_{DC} of utility-scale PV solar power systems, excluding contracts expected to be transferred to Clairvest in connection with the sale of our North American O&M operations. See Note 7. "Consolidated Balance Sheet Details" to our consolidated financial statements for further information. We expect to recognize $146.0 million of revenue during the noncancelable term of these O&M contracts over a weighted-average period of 18.3 years.

15. Stockholders' Equity

Preferred Stock

As of December 31, 2020 and 2019, we had authorized 30,000,000 shares of undesignated preferred stock, $0.001 par value, none of which was issued and outstanding. Our board of directors is authorized to determine the rights, preferences, and restrictions on any series of preferred stock that we may issue.

Common Stock

As of December 31, 2020 and 2019, we had authorized 500,000,000 shares of common stock, $0.001 par value, of which 105,980,466 and 105,448,921 shares, respectively, were issued and outstanding. Each share of common stock is entitled to a single vote. We have not declared or paid any dividends through December 31, 2020.

16. Share-Based Compensation

The following table presents share-based compensation expense recognized in our consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	2020	2019	2018
Cost of sales	$ 3,183	$ 7,541	$ 6,422
Selling, general and administrative	22,093	23,741	21,646
Research and development	3,991	5,917	5,714
Production start-up	—	230	372
Total share-based compensation expense	$ 29,267	$ 37,429	$ 34,154

Share-based compensation expense capitalized in inventory, project assets, and PV solar power systems was $1.1 million and $1.2 million as of December 31, 2020 and 2019, respectively. As of December 31, 2020, we had $28.6 million of unrecognized share-based compensation expense related to unvested restricted and performance stock units, which we expect to recognize over a weighted-average period of approximately 1.3 years. During the years ended December 31, 2020, 2019, and 2018, we recognized an income tax benefit in our statement of operations of $7.3 million, $9.6 million, and $9.9 million, respectively, related to share-based compensation expense, including excess tax benefits. We authorize our transfer agent to issue new shares, net of shares withheld for taxes as appropriate, for the vesting of restricted and performance stock units or grants of unrestricted stock.

Share-Based Compensation Plans

During the year ended December 31, 2015, we adopted our 2015 Omnibus Incentive Compensation Plan ("the 2015 Omnibus Plan"), under which directors, officers, employees, and consultants of First Solar (including any of its subsidiaries) are eligible to participate in various forms of share-based compensation. The 2015 Omnibus Plan was administered by the compensation committee (or any other committee designated by our board of directors), which is authorized to, among other things, determine the recipients of grants, the exercise price, and the vesting schedule of any awards made under the 2015 Omnibus Plan. The 2015 Omnibus Plan provided for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted shares, restricted stock units, performance units, cash incentive awards, performance compensation awards, and other equity-based and equity-related awards.

During the year ended December 31, 2020, the 2015 Omnibus Plan was replaced by our 2020 Omnibus Plan. Upon approval by our shareholders, the 2015 Omnibus Plan share reserve was transferred to the 2020 Omnibus Plan and any forfeitures under the 2015 Omnibus Plan became available for grant under the 2020 Omnibus Plan. This new plan differs from the 2015 Omnibus Plan in that the 2020 Omnibus Plan (i) continues to permit performance-based awards despite the elimination of performance-based awards under Section 162(m) of the Internal Revenue Code of 1986, as amended, (ii) alters the number of, and manner in which we calculate the 2020 Omnibus Plan share reserve (A) to count dividend equivalents paid in stock against the applicable share reserve and (B) to count shares tendered in payment of all awards or withheld by the Company to satisfy any tax withholding obligation against the applicable share reserve, (iii) prohibits payment of dividends or dividend equivalents before the underlying awards vest, (iv) clarifies the method of tax withholding, and (v) responds to other compensation and governance trends.

Under the 2020 Omnibus Plan, directors, officers, employees, and consultants of First Solar, Inc. (including any of its affiliates) are eligible to participate. The 2020 Omnibus Plan is administered by the compensation committee (or any other committee designated by our board of directors), which is authorized to, among other things, determine the recipients of grants, the exercise price, and vesting schedule of any awards made under the 2020 Omnibus Plan. Our board of directors may amend, modify, or terminate the 2020 Omnibus Plan without the approval of our stockholders, except for amendments that would increase the maximum number of shares of our common stock available for awards under the 2020 Omnibus Plan, increase the maximum number of shares of our common stock that may be delivered by incentive stock options, or modify the requirements for participation in the 2020 Omnibus Plan.

The 2020 Omnibus Plan provides for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted shares, restricted stock units, performance units, cash incentive awards, performance compensation awards, and other equity-based and equity-related awards. Excluding the share reserve transferred from the 2015 Omnibus Plan, the maximum number of new shares of our common stock that may be delivered by awards granted under the 2020 Omnibus Plan is 4,000,000. In addition, the shares underlying any forfeited, expired, terminated, or canceled awards, or shares surrendered as payment for taxes required to be withheld, become available for new award grants. We may not grant awards under the 2020 Omnibus Plan after 2030, which is the tenth anniversary of the 2020 Omnibus Plan's approval by our stockholders. As of December 31, 2020, we had 6,608,877 shares available for future issuance under the 2020 Omnibus Plan.

Restricted and Performance Stock Units

We issue shares to the holders of restricted stock units on the date the restricted units vest. The majority of shares issued are net of applicable withholding taxes, which we pay on behalf of our associates. As a result, the actual number of shares issued will be less than the number of restricted stock units granted. Prior to vesting, restricted stock units do not have dividend equivalent rights or voting rights, and the shares underlying the restricted stock units are not considered issued and outstanding.

In February 2017, the compensation committee approved a long-term incentive program for key executive officers and associates. The program is intended to incentivize retention of our key executive talent, provide a smooth

transition from our former key senior talent equity performance program, and align the interests of executive management and stockholders. Specifically, the program consists of (i) performance stock units to be earned over an approximately three-year performance period, which ended in December 2019 and (ii) stub-year grants of separate performance stock units to be earned over an approximately two-year performance period, which ended in December 2018. In February 2019, the compensation committee certified the achievement of the maximum vesting conditions applicable for the stub-year grants. Accordingly, each participant received one share of common stock for each vested performance unit, net of any tax withholdings. In February 2020, the compensation committee certified the achievement of the threshold vesting conditions applicable to the remaining 2017 grants of performance stock units. Accordingly, each participant received one share of common stock for each vested performance unit granted in February 2017, net of any tax withholdings.

In April 2018, in continuation of our long-term incentive program for key executive officers and associates, the compensation committee approved additional grants of performance stock units to be earned over an approximately three-year performance period ending in December 2020. Vesting of the 2018 grants of performance stock units is contingent upon the relative attainment of target gross margin, operating expense, and contracted revenue metrics, to be certified by the compensation committee.

In July 2019, the compensation committee approved additional grants of performance stock units for key executive officers. Such grants are expected to be earned over a multi-year performance period ending in December 2021. Vesting of the 2019 grants of performance stock units is contingent upon the relative attainment of target cost per watt, module wattage, gross profit, and operating income metrics.

In March 2020, the compensation committee approved additional grants of performance stock units for key executive officers. Such grants are expected to be earned over a multi-year performance period ending in December 2022. Vesting of the 2020 grants of performance stock units is contingent upon the relative attainment of contracted revenue, module wattage, and return on capital metrics.

Vesting of performance stock units is also contingent upon the employment of program participants through the applicable vesting dates, with limited exceptions in case of death, disability, a qualifying retirement, or a change-in-control of First Solar. Outstanding performance stock units are included in the computation of diluted net income per share for the years ended December 31, 2020, 2019, and 2018 based on the number of shares that would be issuable if the end of the reporting period were the end of the contingency period.

The following is a summary of our restricted stock unit activity, including performance stock unit activity, for the year ended December 31, 2020:

	Number of Shares	Weighted-Average Grant-Date Fair Value
Unvested restricted stock units at December 31, 2019	2,411,436	$ 50.13
Restricted stock units granted (1)	808,834	45.01
Restricted stock units vested	(751,354)	43.80
Restricted stock units forfeited	(616,660)	43.96
Unvested restricted stock units at December 31, 2020	1,852,256	$ 52.52

(1) Restricted stock units granted include the maximum amount of performance stock units available for issuance under our long-term incentive program for key executive officers and associates. The actual number of shares to be issued will depend on the relative attainment of the performance metrics described above.

We estimate the fair value of our restricted stock unit awards based on our stock price on the grant date. For the years ended December 31, 2019 and 2018, the weighted-average grant-date fair value for restricted stock units

granted in such years was $56.47 and $67.44, respectively. The total fair value of restricted stock units vested during 2020, 2019, and 2018 was $32.9 million, $40.8 million, and $32.2 million, respectively.

Unrestricted Stock

During the years ended December 31, 2020, 2019, and 2018, we awarded 27,731; 26,254; and 31,190, respectively, of fully vested, unrestricted shares of our common stock to the independent members of our board of directors. Accordingly, we recognized $1.5 million, $1.5 million, and $1.6 million of share-based compensation expense for these awards during the years ended December 31, 2020, 2019, and 2018, respectively.

Stock Purchase Plan

Our shareholders approved our stock purchase plan for employees in June 2010. The plan allowed employees to purchase our common stock through payroll withholdings over a six-month offering period at a discount from the closing share price on the last day of the offering period. In April 2017, we amended our stock purchase plan to reduce the purchase discount from 15% to 4%. Accordingly, the plan was considered noncompensatory and no longer resulted in the recognition of share-based compensation expense. Effective as of May 14, 2020, the stock purchase plan was terminated. Accordingly, and because no future issuances of the Company's common stock will occur under the plan, the Company deregistered all unissued shares of the Company's common stock formerly registered for issuance.

17. Income Taxes

On March 27, 2020, the CARES Act was signed into law. The CARES Act includes a number of federal corporate tax relief provisions that are intended to support the ongoing liquidity of U.S. corporations. Among other provisions, the CARES Act allows net operating losses incurred in 2018, 2019, and 2020 to be carried back to each of the five preceding taxable years.

As a result of the CARES Act, we expect to carry back our 2019 and 2020 net operating losses to our 2016 U.S. corporate income tax return, which restores certain foreign tax credits we expect to utilize by amending our 2017 and 2018 U.S. corporate income tax returns. Such amended returns restore other general business credits we expect to utilize in future tax years before the credits expire and eliminate the transition tax liability for accumulated earnings of foreign subsidiaries resulting from the Tax Act. As a result, we recorded a tax benefit of $89.7 million for the year ended December 31, 2020, which represents the one-time income tax benefit for the difference between the statutory federal corporate income tax rate of 35% applicable to our 2016 U.S. corporate income tax return and the current federal corporate income tax rate of 21%. Any changes to the estimate will be recorded in the period the carry back claims are filed.

Although we continue to evaluate our plans for the reinvestment or repatriation of unremitted foreign earnings, we expect to indefinitely reinvest the earnings of our foreign subsidiaries to fund our international operations, with the exception of certain subsidiaries for which applicable taxes have been recorded as of December 31, 2020. Accordingly, we have not recorded any provision for additional U.S. or foreign withholding taxes related to the outside basis differences of our foreign subsidiaries in which we expect to indefinitely reinvest their earnings.

The U.S. and non-U.S. components of our income or loss before income taxes for the years ended December 31, 2020, 2019, and 2018 were as follows (in thousands):

	2020	2019	2018
U.S. income (loss)	$ 22,475	$ (239,547)	$ (49,353)
Non-U.S. income	270,715	119,418	162,500
Income (loss) before taxes and equity in earnings	$ 293,190	$ (120,129)	$ 113,147

The components of our income tax expense or benefit for the years ended December 31, 2020, 2019, and 2018 were as follows (in thousands):

	2020	2019	2018
Current (benefit) expense:			
Federal	$ (149,162)	$ 9,961	$ (44,267)
State	4,027	3,890	(13,568)
Foreign	26,303	41,080	8,788
Total current (benefit) expense	(118,832)	54,931	(49,047)
Deferred expense (benefit):			
Federal	12,681	(55,647)	31,530
State	7,591	(6,737)	2,387
Foreign	(8,734)	1,973	18,571
Total deferred expense (benefit)	11,538	(60,411)	52,488
Total income tax (benefit) expense	$ (107,294)	$ (5,480)	$ 3,441

Our Malaysian subsidiary has been granted a long-term tax holiday that expires in 2027. The tax holiday, which generally provides for a full exemption from Malaysian income tax, is conditional upon our continued compliance with meeting certain employment and investment thresholds, which we are currently in compliance with and expect to continue to comply with through the expiration of the tax holiday in 2027. In addition, our Vietnamese subsidiary has been granted a tax incentive that provides a two-year tax exemption, beginning in 2020, and reduced tax rates through the end of 2025.

Our income tax results differed from the amount computed by applying the relevant U.S. statutory federal corporate income tax rate to our income or loss before income taxes for the following reasons for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	2020		2019		2018	
	Tax	Percent	Tax	Percent	Tax	Percent
Statutory income tax expense (benefit)	$ 61,570	21.0 %	$ (25,227)	21.0 %	$ 23,761	21.0 %
Effect of CARES Act	(89,699)	(30.6)%	—	— %	—	— %
Change in tax contingency	(59,010)	(20.1)%	7,096	(5.9)%	(6,273)	(5.5)%
Changes in valuation allowance	(31,671)	(10.8)%	(5,735)	4.8 %	19,064	16.8 %
Effect of tax holiday	(11,500)	(3.9)%	(26,834)	22.4 %	(26,277)	(23.2)%
Tax credits	(8,091)	(2.8)%	(1,996)	1.7 %	(8,431)	(7.5)%
Share-based compensation	(720)	(0.2)%	(1,594)	1.3 %	(2,105)	(1.9)%
Return to provision adjustments	2,414	0.8 %	14,362	(12.0)%	(25,307)	(22.3)%
Foreign dividend income	3,004	1.0 %	6,718	(5.6)%	16,570	14.6 %
Non-deductible expenses	3,834	1.3 %	11,119	(9.3)%	4,636	4.1 %
Foreign tax rate differential	6,135	2.1 %	17,195	(14.3)%	14,117	12.5 %
State tax, net of federal benefit	11,059	3.8 %	(4,090)	3.4 %	(7,580)	(6.7)%
Other	5,381	1.8 %	3,506	(2.9)%	1,266	1.1 %
Reported income tax (benefit) expense	$ (107,294)	(36.6)%	$ (5,480)	4.6 %	$ 3,441	3.0 %

During the years ended December 31, 2020, 2019, and 2018, we made net tax payments of $22.2 million, $34.7 million, and $58.8 million, respectively.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities calculated under U.S. GAAP and the amounts calculated for preparing our income tax returns. The items that gave rise to our deferred taxes as of December 31, 2020 and 2019 were as follows (in thousands):

	2020	2019
Deferred tax assets:		
Tax credits	$ 134,328	$ 13,127
Net operating losses	110,753	165,669
Accrued expenses	39,458	134,791
Compensation	15,806	22,401
Long-term contracts	10,813	11,215
Inventory	4,587	4,020
Equity in earnings	3,666	2,906
Goodwill	3,065	5,557
Deferred expenses	1,844	2,177
Other	30,091	20,143
Deferred tax assets, gross	354,411	382,006
Valuation allowance	(127,711)	(151,705)
Deferred tax assets, net of valuation allowance	226,700	230,301
Deferred tax liabilities:		
Property, plant and equipment	(103,324)	(77,794)
Investment in foreign subsidiaries	(21,917)	(5,554)
Restricted marketable securities and derivatives	(6,326)	(4,330)
Acquisition accounting / basis difference	(5,079)	(5,356)
Capitalized interest	(3,097)	(2,199)
Other	(6,529)	(10,790)
Deferred tax liabilities	(146,272)	(106,023)
Net deferred tax assets and liabilities	$ 80,428	$ 124,278

We use the deferral method of accounting for investment tax credits under which the credits are recognized as reductions in the carrying value of the related assets. The use of the deferral method also results in a basis difference from the recognition of a deferred tax asset and an immediate income tax benefit for the future tax depreciation of the related assets. Such basis differences are accounted for pursuant to the income statement method.

Changes in the valuation allowance against our deferred tax assets were as follows during the years ended December 31, 2020, 2019, and 2018 (in thousands):

	2020	2019	2018
Valuation allowance, beginning of year	$ 151,705	$ 159,546	$ 143,818
Additions	23,884	9,161	29,359
Reversals	(47,878)	(17,002)	(13,631)
Valuation allowance, end of year	$ 127,711	$ 151,705	$ 159,546

We maintained a valuation allowance of $127.7 million and $151.7 million as of December 31, 2020 and 2019, respectively, against certain of our deferred tax assets, as it is more likely than not that such amounts will not be fully realized. During the year ended December 31, 2020, the valuation allowance decreased by $24.0 million primarily due to the release of the valuation allowance associated with our Vietnamese subsidiary due to its current year operating income, partially offset by an increase in valuation allowances due to current year operating losses in certain other jurisdictions.

As of December 31, 2020, we had federal and aggregate state net operating loss carryforwards of $10.8 million and $722.8 million, respectively. As of December 31, 2019, we had federal and aggregate state net operating loss carryforwards of $218.3 million and $205.6 million, respectively. If not used, the federal net operating loss carryforwards incurred prior to 2018 will begin to expire in 2030, and the state net operating loss carryforwards will begin to expire in 2029. Federal net operating losses arising in tax years beginning in 2018 may be carried forward indefinitely, and the associated deduction is limited to 80% of taxable income. The utilization of our net operating loss carryforwards is also subject to an annual limitation under Section 382 of the Internal Revenue Code due to changes in ownership. Based on our analysis, we do not believe such limitation will impact our realization of the net operating loss carryforwards as we anticipate utilizing them prior to expiration.

As of December 31, 2020, we had U.S. foreign tax credit carryforwards of $28.8 million, federal and state research and development credit carryforwards of $71.7 million, and investment tax credits of $58.4 million available to reduce future federal and state income tax liabilities. If not used, these credits will begin to expire in 2028, 2027, and 2035, respectively.

A reconciliation of the beginning and ending amount of liabilities associated with uncertain tax positions for the years ended December 31, 2020, 2019, and 2018 is as follows (in thousands):

	2020	2019	2018
Unrecognized tax benefits, beginning of year	$ 72,169	$ 72,193	$ 84,173
Increases related to prior year tax positions	169	800	—
Decreases related to prior year tax positions	(256)	—	(2,979)
Decreases from lapse in statute of limitations	(67,396)	(1,539)	(10,704)
Increases related to current tax positions	684	715	1,703
Unrecognized tax benefits, end of year	$ 5,370	$ 72,169	$ 72,193

If recognized, $5.4 million of unrecognized tax benefits, excluding interest and penalties, would reduce our annual effective tax rate. Due to the uncertain and complex application of tax laws and regulations, it is possible that the ultimate resolution of uncertain tax positions may result in liabilities that could be materially different from these estimates. In such an event, we will record additional tax expense or benefit in the period in which such resolution occurs. Our policy is to recognize any interest and penalties that we may incur related to our tax positions as a component of income tax expense or benefit. During the years ended December 31, 2020, 2019, and 2018, we recognized interest and penalties of $5.3 million, $7.9 million, and $5.3 million, respectively, related to unrecognized tax benefits. It is reasonably possible that $0.4 million of uncertain tax positions will be recognized within the next 12 months due to the expiration of the statute of limitations associated with such positions.

We are subject to audit by federal, state, local, and foreign tax authorities. We are currently under examination in Chile, India, Malaysia, and the state of California. We believe that adequate provisions have been made for any adjustments that may result from tax examinations. However, the outcome of tax examinations cannot be predicted with certainty. If any issues addressed by our tax examinations are not resolved in a manner consistent with our expectations, we could be required to adjust our provision for income taxes in the period such resolution occurs.

The following table summarizes the tax years that are either currently under audit or remain open and subject to examination by the tax authorities in the most significant jurisdictions in which we operate:

	Tax Years
Vietnam	2011 - 2019
Japan	2015 - 2019
Malaysia	2015 - 2019
United States	2017 - 2019

In certain of the jurisdictions noted above, we operate through more than one legal entity, each of which has different open years subject to examination. The table above presents the open years subject to examination for the most material of the legal entities in each jurisdiction. Additionally, tax years are not closed until the statute of limitations in each jurisdiction expires. In the jurisdictions noted above, the statute of limitations can extend beyond the open years subject to examination.

18. Net Income (Loss) per Share

The calculation of basic and diluted net income (loss) per share for the years ended December 31, 2020, 2019, and 2018 was as follows (in thousands, except per share amounts):

	2020	2019	2018
Basic net income (loss) per share			
Numerator:			
Net income (loss)	$ 398,355	$ (114,933)	$ 144,326
Denominator:			
Weighted-average common shares outstanding	105,867	105,310	104,745
Diluted net income (loss) per share			
Denominator:			
Weighted-average common shares outstanding	105,867	105,310	104,745
Effect of restricted and performance stock units and stock purchase plan shares	819	—	1,368
Weighted-average shares used in computing diluted net income (loss) per share	106,686	105,310	106,113
Net income (loss) per share:			
Basic	$ 3.76	$ (1.09)	$ 1.38
Diluted	$ 3.73	$ (1.09)	$ 1.36

The following table summarizes the potential shares of common stock that were excluded from the computation of diluted net income (loss) per share for the years ended December 31, 2020, 2019, and 2018 as such shares would have had an anti-dilutive effect (in thousands):

	2020	2019	2018
Anti-dilutive shares	—	868	299

19. Accumulated Other Comprehensive Loss

The following table presents the changes in accumulated other comprehensive loss, net of tax, for the year ended December 31, 2020 (in thousands):

	Foreign Currency Translation Adjustment	Unrealized Gain (Loss) on Marketable Securities and Restricted Marketable Securities	Unrealized Gain (Loss) on Derivative Instruments	Total
Balance as of December 31, 2019	$ (73,429)	$ (5,029)	$ (876)	$ (79,334)
Other comprehensive income (loss) before reclassifications	120	38,236	(2,409)	35,947
Amounts reclassified from accumulated other comprehensive loss	(2,930)	(15,346)	1,199	(17,077)
Net tax effect	—	(1,231)	(31)	(1,262)
Net other comprehensive income (loss)	(2,810)	21,659	(1,241)	17,608
Balance as of December 31, 2020	$ (76,239)	$ 16,630	$ (2,117)	$ (61,726)

The following table presents the pretax amounts reclassified from accumulated other comprehensive loss into our consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

Comprehensive Income Components	Income Statement Line Item	2020	2019	2018
Foreign currency translation adjustment:				
Foreign currency translation adjustment	Cost of sales	$ 370	$ 1,190	$ —
Foreign currency translation adjustment	Other (expense) income, net	2,560	—	—
Total foreign currency translation adjustment		2,930	1,190	—
Unrealized gain on marketable securities and restricted marketable securities	Other (expense) income, net	15,346	40,621	55,405
Unrealized (loss) gain on derivative contracts:				
Foreign exchange forward contracts	Net sales	—	124	(1,698)
Foreign exchange forward contracts	Cost of sales	(1,199)	1,081	(212)
Foreign exchange forward contracts	Foreign currency (loss) income, net	—	—	(5,448)
Foreign exchange forward contracts	Other (expense) income, net	—	—	546
Total unrealized (loss) gain on derivative contracts		(1,199)	1,205	(6,812)
Total gain reclassified		$ 17,077	$ 43,016	$ 48,593

20. Segment and Geographical Information

We operate our business in two segments. Our modules segment involves the design, manufacture, and sale of CdTe solar modules, which convert sunlight into electricity. Third-party customers of our modules segment include integrators and operators of PV solar power systems. Our second segment is our systems segment, through which we provide power plant solutions in certain markets, which include (i) project development, (ii) EPC services, and (iii) O&M services. We may provide any combination of individual products and services within such capabilities (including, with respect to EPC services, by contracting with third parties) depending upon the customer and market opportunity. Our systems segment customers include utilities, independent power producers, commercial and industrial companies, and other system owners. From time to time, we may temporarily own and operate, or retain interests in, certain of our systems for a period of time based on strategic opportunities or market factors.

In August 2020 we entered into an agreement with a subsidiary of Clairvest for the sale of our North American O&M operations. The completion of the transaction is contingent on a number of closing conditions, including the receipt of certain third-party consents and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021. In January 2021, we entered into an agreement with OMERS for the sale of our U.S. project development business. The completion of the transaction is contingent on a number of closing conditions, including the receipt of regulatory approval from FERC, the expiration of the mandatory waiting period under U.S. antitrust laws, a review of the transaction by CFIUS, and other customary closing conditions. Assuming satisfaction of such closing conditions, we expect the sale to be completed in the first half of 2021.

Our segments are managed by our Chief Executive Officer, who is also considered our chief operating decision maker ("CODM"). Our CODM views sales of solar modules or systems as the primary drivers of our resource allocation, profitability, and cash flows. Our modules segment contributes to our operating results by providing the fundamental technologies and solar modules that drive our business and sales opportunities, and our systems segment contributes to our operating results by using such modules as part of a range of PV solar energy solutions, depending on the customer and market opportunity. Our CODM generally makes decisions about allocating resources to our segments and assessing their performance based on gross profit. However, information about segment assets is not reported to the CODM for purposes of making such decisions. Accordingly, we exclude such asset information from our reportable segment financial disclosures.

The following tables present certain financial information for our reportable segments for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31, 2020		
	Modules	Systems	Total
Net sales	$ 1,736,060	$ 975,272	$ 2,711,332
Gross profit	429,131	251,542	680,673
Depreciation and amortization expense	181,402	20,813	202,215
Goodwill	14,462	—	14,462

	Year Ended December 31, 2019		
	Modules	Systems	Total
Net sales	$ 1,460,116	$ 1,603,001	$ 3,063,117
Gross profit	290,079	259,133	549,212
Depreciation and amortization expense	161,993	21,708	183,701
Goodwill	14,462	—	14,462

	Year Ended December 31, 2018		
	Modules	Systems	Total
Net sales	$ 502,001	$ 1,742,043	$ 2,244,044
Gross (loss) profit	(50,467)	442,644	392,177
Depreciation and amortization expense	85,797	18,647	104,444

The following table presents net sales for the years ended December 31, 2020, 2019, and 2018 by geographic region, based on the customer country of invoicing (in thousands):

	2020	2019	2018
United States	$ 1,843,433	$ 2,659,940	$ 1,478,034
Japan	469,657	34,234	234,814
France	127,097	88,816	28,796
Canada	118,865	5,944	5,391
India	33,848	7,451	232,130
Australia	20,788	138,327	153,163
All other foreign countries	97,644	128,405	111,716
Net sales	$ 2,711,332	$ 3,063,117	$ 2,244,044

The following table presents long-lived assets, which include property, plant and equipment, PV solar power systems, project assets (current and noncurrent), and operating lease assets as of December 31, 2020 and 2019 by geographic region, based on the physical location of the assets (in thousands):

	2020	2019
United States	$ 1,043,954	$ 1,077,593
Malaysia	878,064	637,322
Vietnam	670,440	699,841
Japan	382,823	416,375
Chile	224,666	234,470
All other foreign countries	45,775	75,356
Long-lived assets	$ 3,245,722	$ 3,140,957

21. Concentrations of Risks

Customer Concentration Risk. The following customers each comprised 10% or more of our total net sales for the years ended December 31, 2020, 2019, and 2018:

	2020	2019	2018
	% of Net Sales	% of Net Sales	% of Net Sales
Customer #1	11 %	*	*
Customer #2	10 %	*	*
Customer #3	*	16 %	*
Customer #4	*	*	16 %
Customer #5	*	*	13 %

* Net sales for these customers were less than 10% of our total net sales for the period.

Geographic Risk. During the year ended December 31, 2020, our third-party solar module net sales were predominantly in the United States and France and our solar power system net sales were predominantly in the United States and Japan. The concentration of our net sales in a limited number of geographic regions exposes us to local economic, public policy, and regulatory risks in such regions.

Production Risk. Our products include components that are available from a limited number of suppliers or sources. Shortages of essential components could occur due to increases in demand or interruptions of supply, thereby adversely affecting our ability to meet customer demand for our products. Our solar modules are currently produced at our facilities in Perrysburg, Ohio; Lake Township, Ohio; Kulim, Malaysia; and Ho Chi Minh City, Vietnam. Damage to or disruption of these facilities could interrupt our business and adversely affect our ability to generate net sales.

INDEX TO EXHIBITS

The following exhibits are filed with or incorporated by reference into this Annual Report on Form 10-K:

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Date of First Filing	Exhibit Number
3.1	Amended and Restated Certificate of Incorporation of First Solar, Inc.	S-1/A	333-135574	10/25/06	3.1
3.2	Amended and Restated Bylaws of First Solar, Inc.	10-Q	001-33156	5/5/17	3.1
4.1	Description of the Registrant's Securities	10-K	001-33156	2/21/20	4.1
+10.1	Form of Change in Control Severance Agreement	S-1/A	333-135574	10/25/06	10.15
10.2	Form of Director and Officer Indemnification Agreement	10-K	001-33156	2/27/13	10.20
10.3	Credit Agreement, dated as of September 4, 2009, among First Solar, Inc., First Solar Manufacturing GmbH, the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Bank of America and The Royal Bank of Scotland plc, as Documentation Agents, and Credit Suisse, Cayman Islands Branch, as Syndication Agent	8-K	001-33156	9/10/09	10.1
10.4	Charge of Company Shares, dated as of September 4, 2009, between First Solar, Inc., as Chargor, and JPMorgan Chase Bank, N.A., as Security Agent, relating to 66% of the shares of First Solar FE Holdings Pte. Ltd. (Singapore)	8-K	001-33156	9/10/09	10.2
10.5	German Share Pledge Agreements, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar Manufacturing GmbH, First Solar GmbH, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.3
10.6	Guarantee and Collateral Agreement, dated as of September 4, 2009, by First Solar, Inc. in favor of JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.4
10.7	Guarantee, dated as of September 8, 2009, between First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as German Guarantors, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.5
10.8	Assignment Agreement, dated as of September 4, 2009, between First Solar Holdings GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.6
10.9	Assignment Agreement, dated as of September 4, 2009, between First Solar GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.7
10.10	Assignment Agreement, dated as of September 8, 2009, between First Solar Manufacturing GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.8
10.11	Security Trust Agreement, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as Security Grantors, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other Secured Parties party thereto	8-K	001-33156	9/10/09	10.9
10.12	Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, Bank of America N.A. and The Royal Bank of Scotland PLC, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	10/20/10	10.1
+10.13	Employment Agreement, dated March 15, 2011, and Change in Control Severance Agreement, dated April 4, 2011 between First Solar, Inc. and Mark Widmar	10-Q	001-33156	5/5/11	10.3

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Date of First Filing	Exhibit Number
10.14	First Amendment, dated as of May 6, 2011, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	5/12/11	10.1
10.15	Second Amendment and Waiver, dated as of June 30, 2011, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/14/11	10.1
+10.16	Employment Agreement, effective July 1, 2012, and Change in Control Severance Agreement, effective July 1, 2012 between First Solar, Inc. and Georges Antoun	10-Q	001-33156	8/3/12	10.1
10.17	Third Amendment, dated as of October 23, 2012 to the Amended and Restated Credit Agreement dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	10/26/12	10.1
+10.18	Non-Competition and Non-Solicitation Agreement, effective as of March 15, 2011, between First Solar, Inc. and Mark Widmar	10-Q	001-33156	5/7/13	10.2
+10.19	Change in Control Severance Agreement, effective as of July 1, 2012, between First Solar, Inc. and Georges Antoun	10-Q	001-33156	5/7/13	10.3
10.20	Fourth Amendment dated as of July 15, 2013, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/19/13	10.1
10.21	Amended and Restated Guarantee and Collateral Agreement, dated as of July 15, 2013, by First Solar, Inc., First Solar Electric, LLC, First Solar Electric (California), Inc. and First Solar Development, LLC in favor of JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/19/13	10.2
+10.22	Amendment to Change in Control Severance Agreement	10-Q	001-33156	8/7/13	10.1
10.23	Restricted Cash Assignment of Deposits	10-Q	001-33156	8/6/14	10.2
+10.24	First Solar, Inc. 2015 Omnibus Incentive Compensation Plan	DEF 14A	001-33156	4/8/15	App. A
10.25	Fifth Amendment, dated as of June 3, 2015, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	6/5/15	10.1
+10.26	Employment Agreement, effective as of July 25, 2011, and Change in Control Severance Agreement, effective as of October 25, 2011 and amended as of August 1, 2013, between First Solar, Inc. and Philip Tymen deJong	10-K	001-33156	2/24/16	10.23
+10.27	Amendment to Employment Agreement, effective as of July 1, 2016, between First Solar, Inc. and Mark Widmar, and Amendment to Non-Competition and Non-Solicitation Agreement, effective as of July 1, 2016, between First Solar, Inc. and Mark Widmar, and Second Amendment to Change-in-Control Severance Agreement, effective as of July 1, 2016, between First Solar, Inc. and Mark Widmar	10-Q	001-33156	4/28/16	10.1

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Date of First Filing	Exhibit Number
+10.28	Employment Agreement, effective as of October 24, 2016, and Change-in-Control Severance Agreement, effective as of October 24, 2016, between First Solar, Inc. and Alexander Bradley	10-Q	001-33156	11/3/16	10.1
10.29	Sixth Amendment, dated as of January 20, 2017, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	1/27/17	10.1
10.30	Second Amended and Restated Credit Agreement, dated as of July 10, 2017, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/14/17	10.1
+10.31	Form of Grant Notice for Executive Performance Equity Plan	10-Q	001-33156	7/27/18	10.1
+10.32	Form of Grant Notice for CEO Leadership Equity Plan	10-Q	001-33156	7/27/18	10.2
+10.33	Form of Performance Unit Award Agreement - Form Perf Unit-008	10-Q	001-33156	7/27/18	10.3
+10.34	Form of Performance Unit Award Agreement - Form Perf Unit-009	10-K	001-33156	2/22/19	10.45
+10.35	Form of Grant Notice for 2019-2021 Executive Performance Equity Plan	10-Q	001-33156	10/24/19	10.1
+10.36	Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of October 7, 2019 between First Solar, Inc. and Caroline Stockdale	10-K	001-33156	2/21/20	10.34
+10.37	Form of Performance Unit Award Agreement - Form Perf Unit-010	10-K	001-33156	2/21/20	10.46
+10.38	First Solar, Inc. 2020 Omnibus Incentive Compensation Plan	DEF 14A	001-33156	4/1/20	App. A
+10.39	Form of Grant Notice for 2020-2022 Executive Performance Equity Plan	10-Q	001-33156	5/8/20	10.1
+10.40	Employment Agreement, First Amendment to Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of August 10, 2020 between First Solar, Inc. and Patrick Buehler	10-Q	001-33156	10/28/20	10.1
+10.41	Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of August 10, 2020 between First Solar, Inc. and Jason Dymbort	10-Q	001-33156	10/28/20	10.2
+10.42	Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of August 10, 2020 between First Solar, Inc. and Markus Gloeckler	10-Q	001-33156	10/28/20	10.3
+10.43	Employment Agreement, First Amendment to Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of August 10, 2020 between First Solar, Inc. and Michael Koralewski	10-Q	001-33156	10/28/20	10.4
+10.44	First Amendment to Employment Agreement, effective as of October 8, 2020 between First Solar, Inc. and Caroline Stockdale	10-Q	001-33156	10/28/20	10.5

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Date of First Filing	Exhibit Number
+10.45	Employment Agreement, First Amendment to Employment Agreement, Change In Control Severance Agreement, Confidentiality and Intellectual Property Agreement, and Non-Competition and Non-Solicitation Agreement, effective as of August 10, 2020 between First Solar, Inc. and Kuntal Kumar Verma	10-Q	001-33156	10/28/20	10.6
*+10.46	First Amendment to Employment Agreement, effective as of January 8, 2021 between First Solar, Inc. and Markus Gloeckler	—	—	—	—
*+10.47	Form of Performance Unit Award Agreement - Form Perf Unit-011	—	—	—	—
*+10.48	Form of Performance Unit Award Agreement - Form Perf Unit-012	—	—	—	—
*+10.49	Form of RSU Award Agreement	—	—	—	—
*+10.50	Form of Option Award Agreement	—	—	—	—
*+10.51	Form of Share Award Agreement	—	—	—	—
*+10.52	Form of Cash Incentive Award Agreement	—	—	—	—
*21.1	List of Subsidiaries of First Solar, Inc.	—	—	—	—
*23.1	Consent of Independent Registered Public Accounting Firm	—	—	—	—
*31.01	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—
*31.02	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—
†32.01	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	—	—	—	—
*101.INS	XBRL Instance Document – the instance document does not appear in the Interactive Data file because its XBRL tags are embedded within the Inline XBRL document	—	—	—	—
*101.SCH	XBRL Taxonomy Extension Schema Document	—	—	—	—
*101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	—
*101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	—
*101.LAB	XBRL Taxonomy Label Linkbase Document	—	—	—	—
*101.PRE	XBRL Taxonomy Extension Presentation Document	—	—	—	—
*104	Cover page formatted as Inline XBRL and contained in Exhibit 101	—	—	—	—

* Filed herewith.

† Furnished herewith. This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any filings.

\+ Management contract, compensatory plan, or arrangement.

Item 16. ***Form 10-K Summary***

None.

SIGNATURES

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

FIRST SOLAR, INC.

Date: February 25, 2021	By:	/s/ BYRON JEFFERS
	Name:	Byron Jeffers
	Title:	Chief Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ MARK R. WIDMAR Mark R. Widmar	Chief Executive Officer and Director	February 25, 2021
/s/ ALEXANDER R. BRADLEY Alexander R. Bradley	Chief Financial Officer	February 25, 2021
/s/ MICHAEL J. AHEARN Michael J. Ahearn	Chairman of the Board of Directors	February 25, 2021
/s/ SHARON L. ALLEN Sharon L. Allen	Director	February 25, 2021
/s/ RICHARD D. CHAPMAN Richard D. Chapman	Director	February 25, 2021
/s/ GEORGE A. HAMBRO George A. Hambro	Director	February 25, 2021
/s/ MOLLY E. JOSEPH Molly E. Joseph	Director	February 25, 2021
/s/ CRAIG KENNEDY Craig Kennedy	Director	February 25, 2021
/s/ WILLIAM J. POST William J. Post	Director	February 25, 2021
/s/ PAUL H. STEBBINS Paul H. Stebbins	Director	February 25, 2021
/s/ MICHAEL SWEENEY Michael Sweeney	Director	February 25, 2021

EXHIBIT 10.46

FIRST AMENDMENT
TO
EMPLOYMENT AGREEMENT

This First Amendment to the Employment Agreement by and between Markus Gloeckler ("Employee") and First Solar, Inc. ("Employer"). The sole purpose of this First Amendment is to accurately reflect Employee's title. All other provisions of the Employment Agreement dated August 10, 2020 (the "Agreement") shall remain in full force and effect. Employee has been appointed to the position of and shall have the title of Chief Technology Officer. All references to the position of Co-Chief Technology Officer in the Agreement are hereby changed to Chief Technology Officer.

EMPLOYEE:

/s/ Markus Gloeckler
Markus Gloeckler

Date: January 8, 2021

EMPLOYER:
First Solar, Inc.

By: /s/ Caroline Stockdale

Name printed: Caroline Stockdale

Title: Chief People and Communications Officer

Date: January 12, 2021

EXHIBIT 10.47

Form Perf Unit-011

Performance Unit Award Agreement under the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form Perf Unit-011 by reference.

This Performance Share Unit Award Agreement including any addendum or exhibits hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of an award of Performance Units (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan (the "Plan") for the number of performance units set forth in the Grant Notice. Each Performance Unit constitutes an unfunded and unsecured promise of the Company to deliver (or cause to be delivered) to the Participant one share of the common stock of the Company (a "Share"), subject to the all terms and conditions of this Award Agreement, the Grant Notice, and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 14 OF THIS AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions**. The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 18	"Grant Date"	Paragraph 2
"Award"	Paragraph 2	"Participant"	Paragraph 1
"Award Agreement"	Paragraph 2	"Performance Unit"	Paragraph 2
"Business Day"	Section 15	"Plan"	Paragraph 2
"Committee"	Section 3(a)	"Share"	Paragraph 2
"Company"	Paragraph 1	"Tax-Related Items"	Section 6
"Employer"	Section 6		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan or in the Grant Notice.

SECTION 3. Vesting, Forfeiture, and Delivery of Shares.

(a) Vesting. The Grant Notice specifies the Performance-Vesting Conditions required to be attained during the Performance Period for the Performance Units to vest. The Award shall vest on the date the Compensation Committee of the Company's Board of Directors (the "Committee") certifies attainment of the Performance-Vesting Conditions set forth in the Grant Notice have been attained provided that the Participant is actively employed by the Company or an Affiliate on the measurement date as of which the Performance-Vesting Conditions are certified or such earlier date set forth in the Grant Notice.

(b) Forfeiture. Unless the Committee determines otherwise, or unless otherwise provided in the Grant Notice, a written agreement between the Company and the Participant or any other plan, policy or program of the Company then in effect, the Participant's rights with respect to this Award shall immediately terminate, and the Participant will not be entitled to receive any Shares or any other payments or benefits with respect thereto upon termination of the Participant's employment or service relationship with the Company and/or its Affiliates for any reason (as further described in Section 8(l) below).

(c) Delivery of Shares. Upon vesting of the Award, the Shares shall be delivered to the Participant in settlement of the vested Performance Units in accordance with the Settlement Section of the Grant Notice.

SECTION 4. Voting Rights; Dividend Equivalents. The Participant shall not be entitled to exercise any voting rights with respect to a Performance Unit and shall not be entitled to receive dividends, dividend equivalents or other distributions with respect to the Shares underlying such Performance Units prior to the date on which the Participant's rights with respect to the Performance Units have become vested and Shares are delivered to the Participant.

SECTION 5. Non-Transferability of Performance Units. Unless otherwise provided by the Committee in its discretion, Performance Units may not be sold, assigned, alienated, transferred, pledged, attached or otherwise encumbered by the Participant. Any purported sale, assignment, alienation, transfer, pledge, attachment or other encumbrance of a Performance Unit in violation of the provisions of this Section 5 shall be void.

SECTION 6. Responsibility for Taxes.

(a) Regardless of any action the Company or the Participant's employer, if other than the Company (the "Employer"), takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Performance Units, including, without limitation, the grant, vesting or settlement of the Performance Units, the issuance of Shares on the relevant settlement date, the subsequent sale of Shares acquired pursuant to such issuance and the receipt of any dividends; and (ii) do not commit to and are under no obligation to structure the terms of the Award or any aspect of the Performance Units to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company or its agent to satisfy any applicable withholding obligations with regards to Tax-Related Items by withholding from the number of Performance Units

payable to the Participant under this Award Agreement and the Grant Notice a number of Shares to be issued upon settlement of the Performance Units. If, for any reason, the Shares that would otherwise be deliverable to the Participant upon settlement of the Performance Units would be insufficient to satisfy the tax withholding obligations, or if such withholding in Shares is problematic under applicable tax or securities law or has materially adverse accounting consequences, the Participant authorizes (i) the Company and any brokerage firm determined acceptable to the Company to sell on the Participant's behalf a whole number of Shares from those Shares to be issued to the Participant as the Company determines to be appropriate to generate cash proceeds sufficient to satisfy any applicable withholding obligations for Tax-Related Items, (ii) the Company, the Employer and any Affiliate to withhold an amount from the Participant's wages or other compensation or require the Participant to make a cash payment sufficient to fully satisfy any applicable withholding obligations for Tax-Related Items and (iii) the Company, the Employer and any Affiliate to satisfy any applicable withholding obligations for Tax-Related Items by any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee.

(c) Depending on the withholding method, the Company may withhold or account for Tax-Related Items by considering applicable minimum statutory withholding amounts or other applicable withholding rates, including maximum withholding rates, in which case the participant may receive a refund of any over-withheld amount in cash and will have no entitlement to the equivalent in Shares. If the obligation for Tax-Related Items is satisfied by withholding in Shares, the Participant is deemed, for tax and/or social security contributions and other purposes, to have been issued the full number of Shares subject to the vested Performance Units, notwithstanding that a number of Shares are held back solely for the purposes of paying the Tax-Related Items due as a result of any aspect of the Participant's participation in the Plan.

(d) The Participant shall pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of the Participant's participation in the Plan that cannot be satisfied by the means previously described. The Participant expressly acknowledges that the delivery of Shares pursuant to Section 3(c) above is conditioned on satisfaction of all Tax-Related Items in accordance with this Section 6, and that the Company may refuse to deliver the Shares if the Participant fails to comply with the Participant's obligations in connection with the Tax-Related Items.

SECTION 7. Consents and Legends.

(a) Consents. The Participant's rights in respect of the Performance Units are conditioned on the receipt to the full satisfaction of the Committee of any required consents that the Committee may determine to be necessary or advisable (including, without limitation, the Participant's consent to the Company's supplying to any third-party recordkeeper of the Plan such personal information as the Committee deems advisable to administer the Plan, as may further be described to the extent applicable discussing applicable data privacy considerations in an addendum to this Award Agreement, as described in Section 18).

(b) Legends. The Company may affix to certificates for Shares issued pursuant to this Award Agreement any legend that the Committee determines to be necessary or advisable (including to reflect any restrictions to which the Participant may be subject under any applicable securities laws). The Company may advise the applicable transfer agent to place a stop order against any legended Shares.

SECTION 8. Nature of Award. As a condition to the receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards of Performance Units, or benefits in lieu of Performance Units, even if Performance Units have been granted in the past;

(c) all decisions with respect to future awards of Performance Units, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the Performance Units and the Shares subject to the Performance Units are extraordinary items that do not constitute compensation of any kind for services of any kind rendered to the Company or the Employer, and which are outside the scope of the Participant's employment agreement, if any, unless such agreement is directly with the Company and specifically provides to the contrary;

(g) the Performance Units and the Shares subject to the Performance Units, and the income from and value thereof, are not intended to replace any pension rights or compensation;

(h) the Performance Units and the Shares subject to the Performance Units, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, holiday pay, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company, the Employer, or any Affiliate;

(i) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment or service agreement or relationship with the Company or any Affiliate;

(j) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(k) no claim or entitlement to compensation or damages shall arise from forfeiture of the Performance Units resulting from termination of the Participant's employment or other service relationship by the Company or the Employer (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment agreement, if any);

(l) except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment or service relationship, the Participant's right to vest in the Performance Units under the Plan, if any, will terminate effective as of the date the Participant is no longer actively providing services to the Company, the Employer or any Affiliate of the Company (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), and unless otherwise expressly provided in this Award Agreement or determined by the Company, the Participant's right to vest in the Performance Units under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, the Participant's period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively providing services for purposes of the Performance Units (including whether the Participant may still be considered to be providing services while on a leave of absence);

(m) unless otherwise agreed with the Company, Performance Units and Shares subject to the Performance Units, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate;

(n) the Performance Units and the benefits under the Plan, if any, will not automatically transfer to a successor company in the case of a Change in Control or a merger, takeover, or transfer of liability of the Employer; and

(o) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant for the settlement of the Performance Units or the subsequent sale of any Shares acquired upon settlement.

SECTION 9. **No Advice Regarding Grant**. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, or the Participant's acquisition or sale of the underlying Shares. The Participant understands and agrees that the Participant should consult with the Participant's own personal tax, legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 10. **Adjustments**. Without limiting Section 4(b) of the Plan, in the event of any change in the outstanding Shares by reason of any stock split, stock dividend, split-up, split-off, spin-off, recapitalization, merger, consolidation, rights offering, reorganization, combination or exchange of shares, sale by the Company of all or part of its assets, distribution to shareholders other than a normal cash dividend, or other extraordinary or unusual event occurring after the Grant Date and prior to the end of the settlement date, that affects the value of the Performance Units or Shares, the number, class and kind of the securities subject to the Performance Units, or the number of Performance Units, or the Performance-Vesting Conditions, as appropriate, shall be adjusted by the Committee to reflect the occurrence of such event.

SECTION 11. **Electronic Delivery**. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 12. **Successors and Assigns of the Company**. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 13. **Committee Discretion**. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 14. **Dispute Resolution**.

(a) Jurisdiction and Venue. Notwithstanding any provision in any employment agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its

equivalent in the Participant's country of residence) to the applicable address set forth in Section 15 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 14(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in the Participant's employment agreement, if any, between the Participant and the Company, the Participant and the Company hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 14, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 15. **Notice**. All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 16. **Governing Law**. This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 17. **Headings**. Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 18. **Country-Specific or Other Addenda**.

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate the administration of the Plan; provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award.

(c) Any Addendum attached hereto shall be considered a part of this Award Agreement.

SECTION 19. **Severability**. The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 20. **Amendment of this Award Agreement**. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not, to the extent of such impairment, be effective without the Participant's consent (it being understood, notwithstanding the foregoing proviso, that this Award Agreement and the Performance Units shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 21. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on the Participant's participation in the Plan, on the Performance Units and on any Shares acquired under this Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 22. **Award Conditioned On Terms and Conditions for Performance Units**. As a condition to receipt of this Award, the Participant confirms that he/she has read and understood the documents relating to this Award (*i.e.*, the Plan, this Award Agreement, including any Addendum) and accepts the terms of those documents accordingly.

SECTION 23. **Counterparts**. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 24. **Code Section 409A**. The vesting and settlement of Performance Units awarded pursuant to this Award Agreement are intended to either qualify for the "short-term deferral" exemption from Section 409A of the Code or to comply with Section 409A of the Code, as applicable, and the provisions of this Award Agreement will be interpreted, operated, and administered in a manner consistent with these intentions. Anything to the contrary in the Plan or this Award Agreement requiring the consent of the Participant notwithstanding, the Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Award Agreement to ensure that the Performance Units qualify for exemption from or comply with Section 409A of the Code; provided, however, that the Company makes no representations that the Performance Units will be exempt from or comply with Section 409A of the Code, and makes no undertaking to preclude Section 409A of the Code from applying to the Performance Units, and the Company will have no liability to the Participant or any other party if a payment under this Award Agreement that is intended to be exempt from, or

compliant with, Section 409A of the Code is not so exempt or compliant or for any action taken by the Committee with respect thereto. Notwithstanding anything to the contrary in the Plan, this Award Agreement or the Grant Notice, to the extent that the Participant is a Specified Employee, payment or distribution of any amounts with respect to the Performance Units that are subject to Section 409A of the Code will be made as soon as practicable following the first business day of the seventh month following the Participant's Separation from Service from the Company and its Affiliates, or, if earlier, the date of the Participant's death.

SECTION 25. **Waiver**. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 26. **Insider Trading Restrictions/Market Abuse Laws**. The Participant acknowledges that the Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the Shares are listed and in applicable jurisdictions, including the United States, the Participant's country and the designated broker's country, that may affect his or her ability to accept, acquire, sell or otherwise dispose of Shares, rights to Shares (*e.g.*, Performance Units) or rights linked to the value of Shares under the Plan during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before the Participant possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. The Participant acknowledges that it is his or her responsibility to comply with any applicable restrictions, and the Participant should consult his or her personal advisor on this matter.

SECTION 27. **Foreign Asset/Account, Exchange Control and Tax Reporting**. The Participant acknowledges that the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of Shares or cash (including dividends and the proceeds arising from the sale of Shares) derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 28. **Entire Agreement**. This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (PERF UNIT-011)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Award and that will apply to the Participant if he or she resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of May 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant's Performance Units vest and/or the Participant sells any Shares acquired on a settlement date.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Data Privacy Consent. Notice. The purpose of this Notice is to inform the Participant about how the Company processes the Participant's personal data ("Personal Data") in connection with the Plan and the Award Agreement. The Company is the controller of the Participant's Personal Data.

(a) Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for the Company's legitimate business interests for the purposes of allocating Shares and implementing, administering and managing the Plan and/or for the purposes of performing a contract between the Company and the Participant. The Personal Data processed by the Company may include, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock or equivalent benefits awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor of implementing, administering and managing the Plan.

*(b) Stock Plan Administration Service Providers. The Company may transfer the Participant's Personal Data, or parts thereof, to (i) E*Trade Financial (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Company's service providers will open*

an account for the Participant to receive and trade Shares acquired under the Plan and that the Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan. In addition to the foregoing service providers, the Company may transfer portions of the Participant's Personal Data related to the Participant's stock holdings to competent public authorities in connection with statutory audit reports and/or where required by law.

*(c) International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as E*Trade Financial, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. Where it is necessary to transfer the Participant's Personal Data to a different country to where the Participant is based, the Company has implemented appropriate safeguards to protect the Participant's Personal Data, including the execution of data transfer agreements with the recipient of the information. For further information, or a copy of, the adequate safeguards adopted by the Company, the Participant should contact the Participant's local human resources representative. The Company shall process any request in line with applicable law and the Company policy and procedures.*

(d) Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.

(e) Data Subject Rights. The Data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, processed based on withdrawn consent, processed for legitimate interests that, in the context of the Participant's objection, do not prove to be compelling, or processed in non-compliance with applicable legal requirements, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

AUSTRALIA

TERMS AND CONDITIONS

Australian Offer Document. The Participant's right to participate in the Plan, vest in the Performance Units, and receive the Shares underlying the Performance Units granted under the Plan is subject to the terms and conditions stated in the Plan, the Australian Offer Document, the Award Agreement and this Addendum, all of which are intended to comply with the provisions of the Australian Corporations Act 2001, ASIC Regulatory Guide 49 and ASIC Class Order CO 14/1000.

Performance Units Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Australia, the Performance Units will be settled in Shares only. The Performance Units do not provide any right for the Participant to receive a cash payment.

Tax Information. The Plan is a plan to which Subdivision 83A-C of the Income Tax Assessment Act 1997 (Cth) applies (subject to conditions in the Act).

NOTIFICATIONS

Exchange Control Notification. Exchange control reporting is required for cash transactions exceeding A$10,000 and international fund transfers. If there is an Australian bank assisting with the transaction, the Australian bank will file the report for the Participant. If there is no Australian bank involved in the transaction, the Participant must file the report.

BELGIUM

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the Performance Units on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report securities held (including Shares) or any bank or brokerage accounts opened and maintained outside Belgium on the Participant's annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium the details of such accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

Stock Exchange Tax. A stock exchange tax applies to transactions executed by a Belgian resident through a non-Belgian financial intermediary, such as a U.S. broker. The stock exchange tax will likely apply when Shares acquired upon vesting of the Performance Units are sold. The Participant should consult with his or her personal tax advisor for additional details on his or her obligations with respect to the stock exchange tax.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting the Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the issuance of Shares upon vesting of the Performance Units, the subsequent sale of Shares issued in settlement of the Performance Units, and the receipt of any dividends.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that (i) he or she is making an investment decision, (ii) the Shares will be issued to the Participant only if the vesting conditions are met, and (iii) the value of the underlying Shares is not fixed and may increase or decrease in value over the vesting period without compensation to the Participant.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including Shares acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to Performance Units may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

Performance Units Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Canada, the Performance Units will be settled in Shares only. The Performance Units do not provide any right for the Participant to receive a cash payment.

Termination of Employment. The following provision replaces Section 8(l) of the Award Agreement:

Except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment (regardless of the reason for such termination and whether or not later found invalid, unlawful or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), the Participant's right to vest in the Performance Units under the Plan, if any, will terminate effective as of the date that is the earlier of (i) the date on which the Participant's employment is terminated by the Company or the Employer, (ii) the date on which the Participant receives a notice of termination of employment from the Company or the Employer, or (iii) the date on which the Participant is no longer providing active services to the Company or Employer, regardless of any notice period or period of pay in lieu of such notice required under local law. The Participant will not earn or be entitled to any pro-rated vesting for that portion of time before the date on which the Participant's right to vest terminates, nor will the Participant be entitled to any compensation for lost vesting. In the event the date on which the Participant is no longer actively providing services cannot be reasonably determined under the terms of this Award Agreement, the Committee shall have the exclusive discretion to determine when the Participant is no longer employed for purposes of the Performance Units (including whether the Participant may still be considered to be providing services while on a leave of absence).

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Data Privacy Consent" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Securities Law Notification. The Participant will not be permitted to sell or otherwise dispose of the Shares acquired under the Plan within Canada. The Participant will be permitted to sell or dispose of any Shares only if such sale or disposal takes place outside Canada through the facilities of the stock exchange on which the Shares are traded.

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada and Performance Units and Shares acquired under the Plan) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). Thus, unvested Performance Units must be reported (generally at a nil cost) if the C$100,000 cost threshold is exceeded by other foreign specified property the Participant holds. When Shares are acquired, their cost generally is the adjusted cost base ("ACB") of the Shares. The ACB typically equals the fair market value of the Shares at the time of acquisition, but if the Participant owns other Shares, the ACB may have to be averaged with the ACB of the other Shares. The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements.

CHILE

NOTIFICATIONS

Securities Law Notification. This grant of Performance Units constitutes a private offering of securities in Chile effective as of the Grant Date. This offer of Performance Units is made subject to general ruling n° 336 of the Chilean Commission for the Financial Market ("CMF"). The offer refers to securities not registered at the securities registry or at the foreign securities registry of the CMF, and, therefore, such securities are not subject to oversight of the CMF. Given that the Performance Units are not registered in Chile, the Company is not required to provide public information about the Performance Units or the Shares in Chile. Unless the Performance Units and/or the Shares are registered with the CMF, a public offering of such securities cannot be made in Chile.

Esta Oferta de Performance Units constituye una oferta privada de valores en Chile y se inicia en la Fecha de la Oferta. Esta oferta de Performance Units se acoge a las disposiciones de la Norma de Carácter General Nº 336 ("NCG 336") de la Comisión para el Mercado Financiero de Chile ("CMF"). Esta oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la CMF, por lo que tales valores no están sujetos a la fiscalización de ésta. Por tratarse de valores no inscritos en Chile no existe la obligación por parte de la Compañía de entregar en Chile información pública respecto de los mismos. Estos valores no podrán ser objeto de oferta pública en Chile mientras no sean inscritos en el Registro de Valores correspondiente.

Exchange Control Notification. The Participant is not required to repatriate funds obtained from the sale of Shares or the receipt of any dividends. However, if the Participant decides to repatriate such funds, the Participant must do so through the Formal Exchange Market ("*Mercado Cambiario Formal*") if the amount of the funds exceeds US$10,000. In such case, the Participant must report the payment to a commercial bank or registered foreign exchange office receiving the funds.

If the Participant's aggregate investments held outside Chile meets or exceeds US$5,000,000 (including the investments made under the Plan), the Participant must report the investments annually to the Central Bank ("*Banco Central de Chile*"), no later than 60 calendar days following the closing of the month of December. Annex 3.1 of Chapter XII of the Foreign Exchange Regulations must be used to file this report.

Please note that exchange control regulations in Chile are subject to change. The Participant should consult with his or her personal legal advisor regarding any exchange control obligations that the Participant may have prior to the vesting of the Performance Units.

Annual Tax Reporting Obligation. The Chilean Internal Revenue Service ("CIRS") requires Chilean residents to report the details of their foreign investments on an annual basis. Foreign investments include Shares acquired under the Plan. Further, if the Participant wishes to receive a credit against his or her Chilean income taxes for any taxes paid abroad, the Participant must also report the payment of taxes abroad to the CIRS. These reports must be submitted electronically through the CIRS website at www.sii.cl in accordance with applicable deadlines. In addition, Shares acquired upon settlement of the Performance Units must be registered with the CIRS's Foreign Investment Registry. The Participant should consult with his or her personal legal and tax advisors to ensure compliance with applicable requirements.

FRANCE

TERMS AND CONDITIONS

Performance Units Not Tax-Qualified. The Participant understands that the Performance Units are not intended to be French tax-qualified pursuant to Section L. 225-197 1 to L. 225-197 6 of the French Commercial Code, as amended.

Language Consent. By accepting the Performance Units, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. The Participant accepts the terms of those documents accordingly.

En acceptant ces <<Performance Units>>, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities (e.g., Shares) or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether

such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in connection with the sale of securities or any dividends received in relation to Shares in excess of €12,500 must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

Foreign Asset/Account Reporting Notification. In the unlikely event that the Participant holds Shares exceeding 1% of the Company's total shares of common stock, the Participant must notify his or her local tax office of the acquisition of Shares if the acquisition costs for all Shares held by the Participant exceeds €150,000 or if the Participant holds 10% or more in the Company's total shares of common stock.

HONDURAS

There are no country-specific provisions.

INDIA

NOTIFICATIONS

Exchange Control Notification. The Participant understands that the Performance Units are subject to compliance with the exchange control requirements of the Reserve Bank of India. The Participant understands that he or she must repatriate and convert the proceeds into local currency from the sale of Shares acquired under the Plan within ninety (90) days of receipt and any proceeds from dividends paid on Shares held within one-hundred eighty (180) days of receipt, or within other such period of time as may be required under applicable regulations. The Participant will receive a foreign inward remittance certificate ("FIRC") from the bank where the Participant deposits the foreign currency. The Participant should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or the Employer requests proof of repatriation. The Participant should consult with his or her personal legal advisor to ensure compliance with the applicable requirements.

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets (including Shares held outside India) in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (*i.e.*, the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity

of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

NOTIFICATIONS

Exchange Control Notification. Foreign exchange activity is subject to certain reporting requirements. For foreign currency transactions exceeding US$25,000, the underlying document of that transaction will have to be submitted to the relevant local bank. In addition, if proceeds from the sale of Shares or dividends are repatriated to Indonesia, the Indonesian bank handling the transaction is responsible for submitting a report to Bank Indonesia. The Participant should be prepared to provide information, data and/or supporting documents upon request from the bank for purposes of preparing the report.

Foreign Asset/Account Reporting Notification. The Participant has the obligation to report his or her worldwide assets (including foreign accounts and Shares acquired under the Plan) in his or her annual individual income tax return. In addition, if there is a change of position of any foreign asset the Participant holds (including Shares acquired under the Plan), the Participant must report this change in position (e.g., the sale of Shares) to Bank of Indonesia. The report should be submitted online through Bank Indonesia's website no later than the 15th day of the month following the month in which the activity occurred.

JAPAN

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. The Participant is required to report details of any assets held outside Japan as of December 31, including Shares, to the extent such assets have a total net fair market value exceeding ¥50,000,000. Such report will be due from the Participant by March 15 each year. The Participant is responsible for complying with this reporting obligation and should confer with his or her personal tax advisor as to whether the Participant will be required to report the details of Performance Units or Shares he or she holds.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy. The following provision replaces the "Data Privacy Consent" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in the Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan.	***Peserta dengan ini secara jelas, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan mana-mana Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Peserta dalam Pelan tersebut.***
The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address, and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, the fact and conditions of the Participant's participation in the Plan, details of all Performance Units or any other entitlement to shares of stock awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.	***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Majikan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya , alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa syer dalam saham atau jawatan pengarah yang dipegang dalam Syarikat, fakta dan syarat-syarat penyertaan Peserta dalam Pelan, butir-butir semua opsyenatau apa-apa hak lain untuk syer dalam saham yang dianugerahkan, dibatalkan, dilaksanakan, terletak hak, tidak diletak hak ataupun bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.***
The Participant also authorizes any transfer of Data, as may be required, to such stock plan service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan and/or with whom any Shares acquired upon vesting of the Performance Units are deposited. The Participant acknowledges that these recipients may be located in the Participant's country or elsewhere, and that the recipient's country (e.g., the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative. The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan. The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require	***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan pelan saham sebagaimana yang dipilih oleh Syarika tdari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelandan/atau dengan sesiapa yang mendepositkan Saham yang diperolehi melalui pelaksanaan Opsyen ini. Peserta mengakui bahawa penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negara Peserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik***

any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Company and the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future Performance Units or other equity awards to the Participant or administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.***	***dilaksanakan ke atas Data atau menolak atau menarik balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia di lokasi masing-masing, di mana butir-butir hubungannya adalah:*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Selanjutnya, Peserta memahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , status sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan opsyen pada masa depan atau anugerah ekuiti lain kepada Peserta atau mentadbir atau mengekalkan anugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan, Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya***

NOTIFICATIONS

Director Notification Obligation. If the Participant is a director of an Affiliate, the Participant is subject to certain notification requirements under the Malaysian Companies Act, 2016. Among these requirements is an obligation on the Participant's part to notify the Malaysian Affiliate in writing when the Participant acquires an interest (*e.g.*, Performance Units or Shares) in the Company or any related companies. In addition, the Participant must notify the Malaysian Affiliate when the Participant sells Shares (including Shares acquired under the Plan) or the shares of any related company. These notifications must be made within 14 days of acquiring or disposing of any interest in the Company or any related company.

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that he or she understands and agrees that: (a) the Performance Units are not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan or the acquisition of Shares does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Award, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 8 of the Award Agreement, in which the following is clearly described and established: (a) participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; (c) participation in the Plan is voluntary; and (d) the Company and its Affiliates are not responsible for any decrease in the value of the Shares underlying the Performance Units.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar el Otorgamiento, el Beneficiario reconoce y acepta que: (a) las Unidades no se encuentran relacionadas con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Beneficiario.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Beneficiario.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America, es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Beneficiario y la Compañía, ya que el Beneficiario participa únicamente en de forma comercial y que su único Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Beneficiario y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar el Otorgamiento, el Beneficiario reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Beneficiario reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 8 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación en el Plan es voluntaria; y (d) que la Compañía, así como sus Afiliadas, no son responsables por cualquier detrimento en el valor de las acciones que integran las Unidades.

Finalmente, el Beneficiario acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Performance Unit, the Participant acknowledges that: (i) the Performance Unit is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the Performance Unit is not intended to replace any pension rights or compensation.

PHILIPPINES

NOTIFICATIONS

Securities Law Information. This offering is subject to exemption from the requirements of securities registration with the Philippines Securities and Exchange Commission, under Section 10.1 (k) of the Philippine Securities Regulation Code. Section 10.1(k) of the Philippine Securities Regulation Code provides as follows:

"Section 10.1 Exempt Transactions – The requirement of registration under Subsection 8.1 shall not apply to the sale of any security in any of the following section;

[. . .]

"(k) The sale of securities by an issuer to fewer than twenty (20) persons in the Philippines during any twelve-month period."

THE SECURITIES BEING OFFERED OR SOLD HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FURTHER OFFER OR SALE THEREOF IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

The Participant acknowledges he or she is permitted to dispose or sell Shares acquired under the Plan provided the offer and resale of the Shares takes place outside the Philippines through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the NASDAQ Global Select Market in the United States of America.

SINGAPORE

NOTIFICATIONS

Securities Law Notification. The Performance Units are being granted to the Participant pursuant to the "Qualifying Person" exemption under section 273(1)(f) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore. The Participant should note that such Performance Unit grant is subject to section 257 of the SFA and the Participant will not be able to make any subsequent sale in Singapore, or any offer of such subsequent sale of the Shares underlying the Award, unless such sale or offer in Singapore is made (i) more than six months from the Grant Date, (ii) pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the SFA, or (iii) pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Singapore, and Shares acquired under the Plan may be sold through this exchange.

Chief Executive Officer/Director Notification Requirement. If the Participant is a Chief Executive Officer ("CEO") director, associate director or shadow director of a Singaporean Affiliate, the Participant is subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Singapore Affiliate in writing of an interest (*e.g.*, unvested Performance Units, Shares, etc.) in the Company or any Affiliate within two (2) business days of (i) its acquisition or disposal, (ii) any change in previously disclosed interest (*e.g.*, when Shares acquired at vesting are sold), or (iii) becoming the CEO or a director, associate director or shadow director.

THAILAND

NOTIFICATIONS

Exchange Control Notification. Thai resident Participants realizing US$1,000,000 or more in a single transaction from the sale of Shares issued to the Participant following the vesting and settlement of the Performance Units must repatriate the proceeds to Thailand and then convert such proceeds to Thai Baht or deposit the proceeds into a foreign currency account opened with any commercial bank in Thailand within 360 days of repatriation. The Participant must provide details of the transaction (*i.e.*, identification information and purpose of the transaction) to the receiving bank. If the Participant fails to comply with these obligations, the Participant may be subject to penalties assessed by the Bank of Thailand. The Participant should consult his or her personal advisor before taking action with respect to the remittance of proceeds from the sale of Shares into Thailand. The Participant is responsible for ensuring compliance with all exchange control laws in Thailand.

TURKEY

NOTIFICATIONS

Securities Law Notification. Under Turkish law, the Participant is not permitted to sell any Shares acquired under the Plan in Turkey. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Turkey, under the ticker symbol "FSLR" and the Shares may be sold through this exchange.

Exchange Control Notification. Turkish residents are permitted to purchase and sell securities or derivatives traded on exchanges abroad only through a financial intermediary licensed in Turkey. Therefore, the Participant may be required to appoint a Turkish broker to assist the Participant with the sale of the Shares acquired under the Plan. The Participant should consult his or her personal legal advisor before selling any Shares acquired under the Plan to confirm the applicability of this requirement to the Participant.

UNITED ARAB EMIRATES ("UAE")

NOTIFICATIONS

Securities Law Notification. The Performance Units are available only for select employees of the Company and its Affiliates and is in the nature of providing employee incentives in the UAE. This Award Agreement, the Addendum, the Plan and other incidental communication materials are intended for distribution only to eligible employees for the purposes of an employee compensation or reward scheme, and must not be delivered to, or relied on, by any other person.

The Dubai Creative Clusters Authority, Emirates Securities and Commodities Authority and/or the Central Bank of the United Arab Emirates have no responsibility for reviewing or verifying any documents in connection with the Performance Units or this Award Agreement. Further, neither the Ministry of Economy nor the Dubai Department of Economic Development have approved this Award Agreement nor taken steps to verify the information set out in it, and have no responsibility for it.

The securities to which this Award Agreement relates may be illiquid and/or subject to restrictions on their resale. Individuals should conduct their own due diligence on the securities.

Residents of the UAE who do not understand or have questions regarding this Award Agreement, the Addendum or the Plan should consult an authorized financial adviser.

EXHIBIT 10.48

Form Perf Unit-012

Performance Unit Award Agreement under the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form Perf Unit-012 by reference.

This Performance Unit Award Agreement including any addendum or exhibits hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of an award of Performance Units (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan (the "Plan") for the number of performance units (each such performance unit, a "Performance Unit") set forth in the Grant Notice. Each Performance Unit constitutes an unfunded and unsecured promise of the Company to deliver (or cause to be delivered) to the Participant one share of the common stock of the Company (a "Share"), subject to the all terms and conditions of this Award Agreement, the Grant Notice, and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 14 OF THIS AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions**. The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 18	"Grant Date"	Paragraph 2
"Award"	Paragraph 2	"Participant"	Paragraph 1
"Award Agreement"	Paragraph 2	"Performance Unit"	Paragraph 2
"Business Day"	Section 15	"Plan"	Paragraph 2
"Committee"	Section 3(a)	"Share"	Paragraph 2
"Company"	Paragraph 1	"Tax-Related Items"	Section 6
"Employer"	Section 6		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan or in the Grant Notice.

SECTION 3. Vesting, Forfeiture, and Delivery of Shares.

(a) Vesting. The Grant Notice specifies the Performance-Vesting Conditions required to be attained during the Performance Period for the Performance Units to vest. The Award shall vest on the date the Compensation Committee of the Company's Board of Directors (the "Committee") certifies attainment of the Performance-Vesting Conditions set forth in the Grant Notice have been attained provided that the Participant is actively employed by the Company or an Affiliate on the measurement date as of which the Performance-Vesting Conditions are certified or such earlier date set forth in the Grant Notice.

(b) Forfeiture. Unless the Committee determines otherwise, or unless otherwise provided in the Grant Notice, a written agreement between the Company and the Participant or any other plan, policy or program of the Company then in effect, the Participant's rights with respect to this Award shall immediately terminate, and the Participant will not be entitled to receive any Shares or any other payments or benefits with respect thereto upon termination of the Participant's employment or service relationship with the Company and/or its Affiliates for any reason (as further described in Section 8(l) below).

(c) Delivery of Shares. Upon vesting of the Award, the Shares shall be delivered to the Participant in settlement of the vested Performance Units in accordance with the Settlement Section of the Grant Notice.

SECTION 4. Voting Rights; Dividend Equivalents. The Participant shall not be entitled to exercise any voting rights with respect to a Performance Unit and shall not be entitled to receive dividends, dividend equivalents or other distributions with respect to the Shares underlying such Performance Units prior to the date on which the Participant's rights with respect to the Performance Units have become vested and Shares are delivered to the Participant.

SECTION 5. Non-Transferability of Performance Units. Unless otherwise provided by the Committee in its discretion, Performance Units may not be sold, assigned, alienated, transferred, pledged, attached or otherwise encumbered by the Participant. Any purported sale, assignment, alienation, transfer, pledge, attachment or other encumbrance of a Performance Unit in violation of the provisions of this Section 5 shall be void.

SECTION 6. Responsibility for Taxes.

(a) Regardless of any action the Company or the Participant's employer, if other than the Company (the "Employer"), takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Performance Units, including, without limitation, the grant, vesting or settlement of the Performance Units, the issuance of Shares on the relevant settlement date, the subsequent sale of Shares acquired pursuant to such issuance and the receipt of any dividends; and (ii) do not commit to and are under no obligation to structure the terms of the Award or any aspect of the Performance Units to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company or its agent to satisfy any applicable withholding obligations with regards to Tax-Related Items by withholding from the number of Performance Units

payable to the Participant under this Award Agreement and the Grant Notice a number of Shares to be issued upon settlement of the Performance Units. If, for any reason, the Shares that would otherwise be deliverable to the Participant upon settlement of the Performance Units would be insufficient to satisfy the tax withholding obligations, or if such withholding in Shares is problematic under applicable tax or securities law or if there is a substantial likelihood that the use of such form of payment would result in adverse accounting treatment for the Company, the Participant authorizes (i) the Company and any brokerage firm determined acceptable to the Company to sell on the Participant's behalf a whole number of Shares from those Shares to be issued to the Participant as the Company determines to be appropriate to generate cash proceeds sufficient to satisfy any applicable withholding obligations for Tax-Related Items, (ii) the Company, the Employer and any Affiliate to withhold an amount from the Participant's wages or other compensation or require the Participant to make a cash payment sufficient to fully satisfy any applicable withholding obligations for Tax-Related Items and (iii) the Company, the Employer and any Affiliate to satisfy any applicable withholding obligations for Tax-Related Items by any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee.

(c) Depending on the withholding method, the Company may withhold or account for Tax-Related Items by considering statutory or other applicable withholding rates, including minimum or maximum rates in the jurisdictions applicable to the Participant. In no event will the Company withhold less than the minimum or more than the maximum amount necessary to satisfy the withholding requirements in the applicable jurisdiction. In the event of over-withholding, the Participant may receive a refund of any over-withheld amount in cash (with no entitlement to the equivalent in Shares), or if not refunded, the Participant may seek a refund from the local tax authorities. If the obligation for Tax-Related Items is satisfied by withholding in Shares, the Participant will be deemed, for tax and/or social security contributions and other purposes, to have been issued the full number of Shares subject to the vested Performance Units, notwithstanding that a number of Shares are held back solely for the purposes of paying the Tax-Related Items due as a result of any aspect of the Participant's participation in the Plan.

(d) The Participant shall pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of the Participant's participation in the Plan that cannot be satisfied by the means previously described. The Participant expressly acknowledges that the delivery of Shares pursuant to Section 3(c) above is conditioned on satisfaction of all Tax-Related Items in accordance with this Section 6, and that the Company may refuse to deliver the Shares if the Participant fails to comply with the Participant's obligations in connection with the Tax-Related Items.

SECTION 7. Consents and Legends.

(a) Consents. The Participant's rights in respect of the Performance Units are conditioned on the receipt to the full satisfaction of the Committee of any required consents that the Committee may determine to be necessary or advisable (including, without limitation, the Participant's consent to the Company's supplying to any third-party recordkeeper of the Plan such personal information as the Committee deems advisable to administer the Plan, as may further be described to the extent applicable discussing applicable data privacy considerations in an addendum to this Award Agreement, as described in Section 18).

(b) Legends. The Company may affix to certificates for Shares issued pursuant to this Award Agreement any legend that the Committee determines to be necessary or advisable (including to reflect any restrictions to which the Participant may be subject under any applicable securities laws). The Company may advise the applicable transfer agent to place a stop order against any legended Shares.

SECTION 8. Nature of Award. As a condition to the receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards of Performance Units, or benefits in lieu of Performance Units, even if Performance Units have been granted in the past;

(c) all decisions with respect to future Performance Units or other awards, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the Performance Units and the Shares subject to the Performance Units, and the income from and value thereof, are not intended to replace any pension rights or compensation;

(g) the Performance Units and the Shares subject to the Performance Units, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, holiday pay, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company, the Employer, or any Affiliate;

(h) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment or service agreement or relationship with the Company or any Affiliate;

(i) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(j) no claim or entitlement to compensation or damages shall arise from forfeiture of the Performance Units resulting from termination of the Participant's employment or other service relationship by the Company or the Employer (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment agreement, if any);

(k) except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment or service relationship, the Participant's right to vest in the Performance Units under the Plan, if any, will terminate effective as of the date the Participant is no longer actively providing services to the Company, the Employer or any Affiliate of the Company (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), and unless otherwise expressly provided in this Award Agreement or determined by the Company, the Participant's right to vest in the Performance Units under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, the Participant's period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively providing services for purposes of the Performance Units (including whether the Participant may still be considered to be providing services while on a leave of absence);

(l) unless otherwise agreed with the Company, Performance Units and Shares subject to the Performance Units, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate;

(m) unless otherwise agreed to by the Company, the Performance Units and the benefits under the Plan, if any, will not automatically transfer to a successor company in the case of a Change of Control or a merger, takeover, or transfer of liability of the Employer; and

(n) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant for the settlement of the Performance Units or the subsequent sale of any Shares acquired upon settlement.

SECTION 9. **No Advice Regarding Grant**. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, or the Participant's acquisition or sale of the underlying Shares. The Participant understands and agrees that the Participant should consult with the Participant's own personal tax, legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 10. **Adjustments**. Without limiting Section 4(b) of the Plan, in the event of any change in the outstanding Shares by reason of any stock split, stock dividend, split-up, split-off, spin-off, recapitalization, merger, consolidation, rights offering, reorganization, combination or exchange of shares, sale by the Company of all or part of its assets, distribution to shareholders other than a normal cash dividend, or other extraordinary or unusual event occurring after the Grant Date and prior to the end of the settlement date, that affects the value of the Performance Units or Shares, the number, class and kind of the securities subject to the Performance Units, or the number of Performance Units, or the Performance-Vesting Conditions, as appropriate, shall be adjusted by the Committee to reflect the occurrence of such event.

SECTION 11. **Electronic Delivery**. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 12. **Successors and Assigns of the Company**. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 13. **Committee Discretion**. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 14. **Dispute Resolution**.

(a) Jurisdiction and Venue. Notwithstanding any provision in any employment agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its equivalent in the Participant's country of residence) to the applicable address set forth in Section 15 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 14(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this

Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in the Participant's employment agreement, if any, between the Participant and the Company, the Participant and the Company hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 14, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 15. **Notice**. All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 16. **Governing Law**. This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 17. **Headings**. Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 18. **Country-Specific or Other Addenda**.

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines

that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate the administration of the Plan; provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award.

(c) Any Addendum attached hereto shall be considered a part of this Award Agreement.

SECTION 19. **Severability**. The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 20. **Amendment of this Award Agreement**. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not, to the extent of such impairment, be effective without the Participant's consent (it being understood, notwithstanding the foregoing proviso, that this Award Agreement and the Performance Units shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 21. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on the Participant's participation in the Plan, on the Performance Units and on any Shares acquired under this Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 22. **Award Conditioned On Terms and Conditions for Performance Units**. As a condition to receipt of this Award, the Participant confirms that he/she has read and understood the documents relating to this Award (*i.e.*, the Plan, this Award Agreement, including any Addendum) and accepts the terms of those documents accordingly.

SECTION 23. **Counterparts**. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 24. **Code Section 409A**. The vesting and settlement of Performance Units awarded pursuant to this Award Agreement are intended to either qualify for the "short-term deferral" exemption from Section 409A of the Code or to comply with Section 409A of the Code, as applicable, and the provisions of this Award Agreement will be interpreted, operated, and administered in a manner consistent with these intentions. Anything to the contrary in the Plan or this Award Agreement requiring the consent of the Participant notwithstanding, the Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Award Agreement to ensure that the Performance Units qualify for exemption from or comply with Section 409A of the Code; provided, however, that the Company makes no representations that the Performance Units will be exempt from or comply with Section 409A of the Code, and makes no undertaking to preclude Section 409A of the Code from applying to the Performance Units, and the Company will have no liability to the Participant or any other party if a payment under this Award Agreement that is intended to be exempt from, or compliant with, Section 409A of the Code is not so exempt or compliant or for any action taken by the Committee with respect thereto. Notwithstanding anything to the contrary in the Plan, this Award Agreement or the Grant Notice, to the extent that the Participant is a Specified Employee, payment or distribution of any amounts with respect to the Performance Units that are subject to Section 409A of the Code will be made as soon as practicable following the first business day of the seventh month following the Participant's Separation from Service from the Company and its Affiliates, or, if earlier, the date of the Participant's death.

SECTION 25. **Waiver**. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 26. **Insider Trading Restrictions/Market Abuse Laws**. The Participant acknowledges that the Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the Shares are listed and in applicable jurisdictions, including the United States, the Participant's country and the designated broker's country, that may affect his or her ability to accept, acquire, sell or otherwise dispose of Shares, rights to Shares (*e.g.*, Performance Units) or rights linked to the value of Shares under the Plan during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before the Participant possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. The Participant acknowledges that it is his or her responsibility to comply with any applicable restrictions, and the Participant should consult his or her personal advisor on this matter.

SECTION 27. **Foreign Asset/Account, Exchange Control and Tax Reporting**. The Participant acknowledges that the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of Shares or cash (including dividends and the proceeds arising from the sale of Shares) derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 28. **Entire Agreement**. This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (PERF UNIT-012)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Award and that will apply to the Participant if he or she resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of September 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant's Performance Units vest and/or the Participant sells any Shares acquired on a settlement date.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Consent to Personal Data Processing and Transfer. By accepting the Award via the Company's acceptance procedure, the Participant is declaring that he or she agrees with the data processing practices described herein and consents to the collection, processing and use of Personal Data (as defined below) by the Company and the transfer of Personal Data to the recipients mentioned herein, including recipients located in countries which do not adduce an adequate level of protection from a European (or other) data protection law perspective, for the purposes described herein.

(a) Declaration of Consent. The Participant understands that the Participant must review the following information about the processing of the Participant's personal data by or on behalf of the Company or the Employer as described in this Award Agreement and any materials related to the Award (the "Personal Data") and declare his or her consent. As regards the processing of the Participant's Personal Data in connection with the Plan and this Award Agreement, the Participant understands that the Company is the controller of the Participant's Personal Data.

(b) Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for purposes of allocating Shares and implementing, administering and managing the Plan. The Personal Data processed by the Company includes, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock

or equivalent benefits awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor. The legal basis for the processing of the Participant's Personal Data, where required, is the Participant's consent.

(c) Stock Plan Administration Service Providers. The Participant understands that the Company transfers the Participant's Personal Data, or parts thereof, to (i) Fidelity Stock Plan Services, LLC (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Company's service providers will open an account for the Participant to receive and trade Shares acquired under the Plan and that the Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan.

(d) International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as Fidelity Stock Plan Services, LLC and My Equity Comp, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of the Participant's Personal Data is the Participant's consent.

(e) Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. The Participant understands that any participation in the Plan and his or her consent are purely voluntary. The Participant may deny or later withdraw his or her consent at any time, with future effect and for any or no reason. If the Participant denies or later withdraws his or her consent, the Company can no longer offer participation in the Plan or grant equity awards to the Participant or administer or maintain such awards, and the Participant will no longer be eligible to participate in the Plan. The Participant further understands that denial or withdrawal of his or her consent would not affect his or her status or salary as an employee or his or her career and that the Participant would merely forfeit the opportunities associated with the Plan.

(g) Data Subject Rights. The data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

AUSTRALIA

TERMS AND CONDITIONS

Australian Offer Document. The Participant's right to participate in the Plan, vest in the Performance Units, and receive the Shares underlying the Performance Units granted under the Plan is subject to the terms and conditions stated in the Plan, the Australian Offer Document, the Award Agreement and this Addendum, all of which are intended to comply with the provisions of the Australian Corporations Act 2001, ASIC Regulatory Guide 49 and ASIC Class Order CO 14/1000.

Performance Units Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Australia, the Performance Units will be settled in Shares only. The Performance Units do not provide any right for the Participant to receive a cash payment.

Tax Information. The Plan is a plan to which Subdivision 83A-C of the Income Tax Assessment Act 1997 (Cth) applies (subject to conditions in the Act).

NOTIFICATIONS

Exchange Control Notification. Exchange control reporting is required for cash transactions exceeding A$10,000 and international fund transfers. If there is an Australian bank assisting with the transaction, the Australian bank will file the report for the Participant. If there is no Australian bank involved in the transaction, the Participant must file the report.

BELGIUM

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the Performance Units on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report securities held (including Shares) or any bank or brokerage accounts opened and maintained outside Belgium on the Participant's annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium the details of such accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

Stock Exchange Tax. A stock exchange tax applies to transactions executed by a Belgian resident through a non-Belgian financial intermediary, such as a U.S. broker. The stock exchange tax will likely apply when Shares acquired upon vesting of the Performance Units are sold. The Participant should consult with his or her personal tax advisor for additional details on his or her obligations with respect to the stock exchange tax.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting the Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the issuance of Shares upon vesting of the Performance Units, the subsequent sale of Shares issued in settlement of the Performance Units, and the receipt of any dividends.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that (i) he or she is making an investment decision, (ii) the Shares will be issued to the Participant only if the vesting conditions are met, and (iii) the value of the underlying Shares is not fixed and may increase or decrease in value over the vesting period without compensation to the Participant.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including Shares acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to Performance Units may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

Performance Units Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Canada, the Performance Units will be settled in Shares only. The Performance Units do not provide any right for the Participant to receive a cash payment.

Termination of Employment. The following provision replaces Section 8(l) of the Award Agreement:

Except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment (regardless of the reason for such termination and whether or not later found invalid, unlawful or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), the Participant's right to vest in the Performance Units under the Plan, if any, will terminate effective as of the date that is the earlier of (i) the date on which the Participant's employment is terminated by the Company or the Employer, (ii) the date on which the Participant receives a notice of termination of employment from the Company or the Employer, or (iii) the date on which the Participant is no longer providing active services to the Company or Employer, regardless of any period during which notice, pay in lieu of notice or related payments or damages are provided or required to be provided under local law. The Participant will not earn

or be entitled to any pro-rated vesting for that portion of time before the date on which the Participant's right to vest terminates, nor will the Participant be entitled to any compensation for lost vesting. In the event the date on which the Participant is no longer actively providing services cannot be reasonably determined under the terms of this Award Agreement, the Committee shall have the exclusive discretion to determine when the Participant is no longer employed for purposes of the Performance Units (including whether the Participant may still be considered to be providing services while on a leave of absence).

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Securities Law Notification. The Participant will not be permitted to sell or otherwise dispose of the Shares acquired under the Plan within Canada. The Participant will be permitted to sell or dispose of any Shares only if such sale or disposal takes place outside Canada through the facilities of the stock exchange on which the Shares are traded.

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada and Performance Units and Shares acquired under the Plan) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). Thus, unvested Performance Units must be reported (generally at a nil cost) if the C$100,000 cost threshold is exceeded by other foreign specified property the Participant holds. When Shares are acquired, their cost generally is the adjusted cost base ("ACB") of the Shares. The ACB typically equals the fair market value of the Shares at the time of acquisition, but if the Participant owns other Shares, the ACB may have to be averaged with the ACB of the other Shares. The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements.

CHILE

NOTIFICATIONS

Securities Law Notification. This grant of Performance Units constitutes a private offering of securities in Chile effective as of the Grant Date. This offer of Performance Units is made subject to general ruling n° 336 of the Chilean Commission for the Financial Market ("CMF"). The offer refers to securities not registered at the securities

registry or at the foreign securities registry of the CMF, and, therefore, such securities are not subject to oversight of the CMF. Given that the Performance Units are not registered in Chile, the Company is not required to provide public information about the Performance Units or the Shares in Chile. Unless the Performance Units and/or the Shares are registered with the CMF, a public offering of such securities cannot be made in Chile.

Esta Oferta de Performance Units constituye una oferta privada de valores en Chile y se inicia en la Fecha de la Oferta. Esta oferta de Performance Units se acoge a las disposiciones de la Norma de Carácter General Nº 336 ("NCG 336") de la Comisión para el Mercado Financiero de Chile ("CMF"). Esta oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la CMF, por lo que tales valores no están sujetos a la fiscalización de ésta. Por tratarse de valores no inscritos en Chile no existe la obligación por parte de la Compañía de entregar en Chile información pública respecto de los mismos. Estos valores no podrán ser objeto de oferta pública en Chile mientras no sean inscritos en el Registro de Valores correspondiente.

Exchange Control Notification. The Participant is not required to repatriate funds obtained from the sale of Shares or the receipt of any dividends. However, if the Participant decides to repatriate such funds, the Participant must do so through the Formal Exchange Market ("*Mercado Cambiario Formal*") if the amount of the funds exceeds US$10,000. In such case, the Participant must report the payment to a commercial bank or registered foreign exchange office receiving the funds.

If the Participant's aggregate investments held outside Chile meets or exceeds US$5,000,000 (including the investments made under the Plan), the Participant must inform the Central Bank ("*Banco Central de Chile*") with updated information accumulated for a three-month period within and no later than the first 45 calendar days following the closing of the months of March, June and September and, no later than 60 calendar days following the closing of the month of December. Annex 3.1 of Chapter XII of the Foreign Exchange Regulations must be used to file this report.

Please note that exchange control regulations in Chile are subject to change. The Participant should consult with his or her personal legal advisor regarding any exchange control obligations that the Participant may have prior to the vesting of the Performance Units.

Annual Tax Reporting Obligation. The Chilean Internal Revenue Service ("CIRS") requires Chilean residents to report the details of their foreign investments on an annual basis. Foreign investments include Shares acquired under the Plan. Further, if the Participant wishes to receive a credit against his or her Chilean income taxes for any taxes paid abroad, the Participant must also report the payment of taxes abroad to the CIRS. These reports must be submitted electronically through the CIRS website at www.sii.cl in accordance with applicable deadlines. In addition, Shares acquired upon settlement of the Performance Units must be registered with the CIRS's Foreign Investment Registry. The Participant should consult with his or her personal legal and tax advisors to ensure compliance with applicable requirements.

FRANCE

TERMS AND CONDITIONS

Performance Units Not Tax-Qualified. The Participant understands that the Performance Units are not intended to be French tax-qualified pursuant to Section L. 225-197 1 to L. 225-197 6 of the French Commercial Code, as amended.

Language Consent. By accepting the Performance Units, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. The Participant accepts the terms of those documents accordingly.

En acceptant ces <<Performance Units>>, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities (e.g., Shares) or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in connection with the sale of securities or any dividends received in relation to Shares in excess of €12,500 must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

HONDURAS

There are no country-specific provisions.

INDIA

NOTIFICATIONS

Exchange Control Notification. The Participant understands that the Performance Units are subject to compliance with the exchange control requirements of the Reserve Bank of India. The Participant understands that he or she must repatriate and convert the proceeds into local currency from the sale of Shares acquired under the Plan within ninety (90) days of receipt and any proceeds from dividends paid on Shares held within one-hundred eighty (180) days of receipt, or within other such period of time as may be required under applicable regulations. The Participant will receive a foreign inward remittance certificate ("FIRC") from the bank where the Participant deposits the foreign currency. The Participant should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or the Employer requests proof of repatriation. The Participant should consult with his or her personal legal advisor to ensure compliance with the applicable requirements.

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets (including Shares held outside India) in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (*i.e.*, the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity

of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

NOTIFICATIONS

Exchange Control Notification. Foreign exchange activity is subject to certain reporting requirements. For foreign currency transactions exceeding US$25,000, the underlying document of that transaction will have to be submitted to the relevant local bank. In addition, if proceeds from the sale of Shares or dividends are repatriated to Indonesia, the Indonesian bank handling the transaction is responsible for submitting a report to Bank Indonesia. The Participant should be prepared to provide information, data and/or supporting documents upon request from the bank for purposes of preparing the report.

Foreign Asset/Account Reporting Notification. The Participant has the obligation to report his or her worldwide assets (including foreign accounts and Shares acquired under the Plan) in his or her annual individual income tax return. In addition, if there is a change of position of any foreign asset the Participant holds (including Shares acquired under the Plan), the Participant must report this change in position (e.g., the sale of Shares) to Bank of Indonesia. The report should be submitted online through Bank Indonesia's website no later than the 15th day of the month following the month in which the activity occurred.

JAPAN

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. The Participant is required to report details of any assets held outside Japan as of December 31, including Shares, to the extent such assets have a total net fair market value exceeding ¥50,000,000. Such report will be due from the Participant by March 15 each year. The Participant is responsible for complying with this reporting obligation and should confer with his or her personal tax advisor as to whether the Participant will be required to report the details of Performance Units or Shares he or she holds.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy Consent. The following provision replaces the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in the Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan.	***Peserta dengan ini secara jelas, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan mana-mana Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Pesertadalam Pelan tersebut.***
The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address, and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, the fact and conditions of the Participant's participation in the Plan, details of all Performance Units or any other entitlement to shares of stock awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.	***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Majikan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya , alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa syer dalam saham atau jawatan pengarah yang dipegang dalam Syarikat, fakta dan syarat-syarat penyertaan Peserta dalam Pelan, butir-butir semua opsyenatau apa-apa hak lain untuk syer dalam saham yang dianugerahkan, dibatalkan, dilaksanakan, terletak hak, tidak diletak hak ataupun bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.***
The Participant also authorizes any transfer of Data, as may be required, to such stock plan service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan and/or with whom any Shares acquired upon vesting of the Performance Units are deposited. The Participant acknowledges that these recipients may be located in the Participant's country or elsewhere, and that the recipient's country (e.g., the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative. The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan. The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require	***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan pelan saham sebagaimana yang dipilih oleh Syarikat dari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelandan/atau dengan sesiapa yang mendepositkan Saham yang diperolehi melalui pelaksanaan Opsyen ini. Peserta mengakui bahawa penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negara Peserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik***

any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Industri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Company and the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future Performance Units or other equity awards to the Participant or administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.***	***balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia di lokasi masing-masing, di mana butir-butir hubungannya adalah:*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Industri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Selanjutnya, Peserta memahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , status sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan opsyen pada masa depan atau anugerah ekuiti lain kepada Peserta atau mentadbir atau mengekalkan anugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan, Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya.***

NOTIFICATIONS

Director Notification Obligation. If the Participant is a director of an Affiliate, the Participant is subject to certain notification requirements under the Malaysian Companies Act, 2016. Among these requirements is an obligation on the Participant's part to notify the Malaysian Affiliate in writing when the Participant acquires an interest (*e.g.*, Performance Units or Shares) in the Company or any related companies. In addition, the Participant must notify the Malaysian Affiliate when the Participant sells Shares (including Shares acquired under the Plan) or the shares of any related company. These notifications must be made within 14 days of acquiring or disposing of any interest in the Company or any related company.

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that he or she understands and agrees that: (a) the Performance Units are not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan or the acquisition of Shares does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Award, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 8 of the Award Agreement, in which the following is clearly described and established: (a) participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; (c) participation in the Plan is voluntary; and (d) the Company and its Affiliates are not responsible for any decrease in the value of the Shares underlying the Performance Units.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar el Otorgamiento, el Beneficiario reconoce y acepta que: (a) las Unidades no se encuentran relacionadas con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Beneficiario.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Beneficiario.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America, es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Beneficiario y la Compañía, ya que el Beneficiario participa únicamente en de forma comercial y que su único Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Beneficiario y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar el Otorgamiento, el Beneficiario reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Beneficiario reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 8 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación en el Plan es voluntaria; y (d) que la Compañía, así como sus Afiliadas, no son responsables por cualquier detrimento en el valor de las acciones que integran las Unidades.

Finalmente, el Beneficiario acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Performance Unit, the Participant acknowledges that: (i) the Performance Unit is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the Performance Unit is not intended to replace any pension rights or compensation.

PHILIPPINES

NOTIFICATIONS

Securities Law Information. This offering is subject to exemption from the requirements of securities registration with the Philippines Securities and Exchange Commission, under Section 10.1 (k) of the Philippine Securities Regulation Code. Section 10.1(k) of the Philippine Securities Regulation Code provides as follows:

"Section 10.1 Exempt Transactions – The requirement of registration under Subsection 8.1 shall not apply to the sale of any security in any of the following section;

[. . .]

"(k) The sale of securities by an issuer to fewer than twenty (20) persons in the Philippines during any twelve-month period."

THE SECURITIES BEING OFFERED OR SOLD HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FURTHER OFFER OR SALE THEREOF IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

The Participant acknowledges he or she is permitted to dispose or sell Shares acquired under the Plan provided the offer and resale of the Shares takes place outside the Philippines through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the NASDAQ Global Select Market in the United States of America.

SINGAPORE

NOTIFICATIONS

Securities Law Notification. The Performance Units are being granted to the Participant pursuant to the "Qualifying Person" exemption under section 273(1)(f) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore. The Participant should note that such Performance Unit grant is subject to section 257 of the SFA and the Participant will not be able to make any subsequent sale in Singapore, or any offer of such subsequent sale of the Shares underlying the Award, unless such sale or offer in Singapore is made (i) more than six months from the Grant Date, (ii) pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the SFA, or (iii) pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Singapore, and Shares acquired under the Plan may be sold through this exchange.

Director Notification Requirement. If the Participant is a director, associate director or shadow director of a Singaporean Affiliate, the Participant is subject to certain notification requirements under the Singapore Companies

Act. Among these requirements is an obligation to notify the Singapore Affiliate in writing of an interest (*e.g.*, unvested Performance Units, Shares, etc.) in the Company or any Affiliate within two (2) business days of (i) its acquisition or disposal, (ii) any change in previously disclosed interest (*e.g.*, when Shares acquired at vesting are sold), or (iii) becoming a director, associate director or shadow director.

THAILAND

NOTIFICATIONS

Exchange Control Notification. Thai resident Participants realizing US$1,000,000 or more in a single transaction from the sale of Shares issued to the Participant following the vesting and settlement of the Performance Units must repatriate the proceeds to Thailand and then convert such proceeds to Thai Baht or deposit the proceeds into a foreign currency account opened with any commercial bank in Thailand within 360 days of repatriation. The Participant must provide details of the transaction (*i.e.*, identification information and purpose of the transaction) to the receiving bank. If the Participant fails to comply with these obligations, the Participant may be subject to penalties assessed by the Bank of Thailand. The Participant should consult his or her personal advisor before taking action with respect to the remittance of proceeds from the sale of Shares into Thailand. The Participant is responsible for ensuring compliance with all exchange control laws in Thailand.

TURKEY

NOTIFICATIONS

Securities Law Notification. Under Turkish law, the Participant is not permitted to sell any Shares acquired under the Plan in Turkey. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Turkey, under the ticker symbol "FSLR" and the Shares may be sold through this exchange.

Exchange Control Notification. Turkish residents are permitted to purchase and sell securities or derivatives traded on exchanges abroad only through a financial intermediary licensed in Turkey. Therefore, the Participant may be required to appoint a Turkish broker to assist the Participant with the sale of the Shares acquired under the Plan. The Participant should consult his or her personal legal advisor before selling any Shares acquired under the Plan to confirm the applicability of this requirement to the Participant.

UNITED ARAB EMIRATES ("UAE")

NOTIFICATIONS

Securities Law Notification. The Performance Units are available only for select employees of the Company and its Affiliates and is in the nature of providing employee incentives in the UAE. This Award Agreement, the Addendum, the Plan and other incidental communication materials are intended for distribution only to eligible employees for the purposes of an employee compensation or reward scheme, and must not be delivered to, or relied on, by any other person.

The Dubai Creative Clusters Authority, Emirates Securities and Commodities Authority and/or the Central Bank of the United Arab Emirates have no responsibility for reviewing or verifying any documents in connection with the Performance Units or this Award Agreement. Further, neither the Ministry of Economy nor the Dubai Department of Economic Development have approved this Award Agreement nor taken steps to verify the information set out in it, and have no responsibility for it.

The securities to which this Award Agreement relates may be illiquid and/or subject to restrictions on their resale. Individuals should conduct their own due diligence on the securities.

Residents of the UAE who do not understand or have questions regarding this Award Agreement, the Addendum or the Plan should consult an authorized financial adviser.

EXHIBIT 10.49

Form RSU-012

RESTRICTED STOCK UNIT AWARD AGREEMENT under the FIRST SOLAR, INC. 2020 OMNIBUS INCENTIVE COMPENSATION PLAN, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form RSU-012 by reference.

This Restricted Stock Unit Award Agreement including any addendum hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of an award of Restricted Stock Units (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan (the "Plan") for the number of restricted stock units (each such restricted stock unit, an "RSU") set forth in the Grant Notice. Each RSU constitutes an unfunded and unsecured promise of the Company to deliver (or cause to be delivered) to the Participant one share of the common stock of the Company (a "Share"), subject to all the terms and conditions of this Award Agreement and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 15 OF THIS AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions**. The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 19	"Participant"	Paragraph 1
"Award"	Paragraph 2	"Plan"	Paragraph 2
"Award Agreement"	Paragraph 2	"RSU"	Paragraph 2
"Business Day"	Section 16	"Share"	Paragraph 2
"Company"	Paragraph 1	"Tax-Related Items"	Section 7
"Employer"	Section 7	"Vesting Date"	Section 3(a)
"Grant Date"	Paragraph 2		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan.

SECTION 3. **Vesting and Delivery of Shares**

(a) Vesting. Except as otherwise determined by the Committee in its sole discretion, the Participant shall vest in the number of RSUs that corresponds to the vesting date(s) set forth in the Grant Notice (each, a "Vesting Date"); provided that the Participant is actively employed by the Company or an Affiliate on the relevant Vesting Date. For purposes of this Award Agreement, an "Affiliate" of the Company is an individual or entity that

directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the Company.

(b) Delivery of Shares. On or shortly following, but in no event later than 30 days after, each Vesting Date, the Company shall deliver to the Participant one Share for each RSU that vests on such date.

SECTION 4. Forfeiture of RSUs. Unless the Committee determines otherwise, or unless otherwise provided in the Grant Notice, a written agreement between the Company and the Participant or any other plan, policy or program of the Company then in effect, if the Participant's rights with respect to any RSUs awarded pursuant to this Award Agreement do not vest prior to the date on which the Participant's employment or service relationship with the Company and/or its Affiliates terminates for any reason, the Participant's rights with respect to such RSUs shall immediately terminate, and the Participant will not be entitled to receive any Shares or any other payments or benefits with respect thereto (as further described in Section 9(l) below).

SECTION 5. Voting Rights; Dividend Equivalents. The Participant shall not be entitled to exercise any voting rights with respect to an RSU and shall not be entitled to receive dividends, dividend equivalents or other distributions with respect to the Shares underlying such RSU prior to the date on which the Participant's rights with respect to the RSU have become vested and Shares are delivered to the Participant.

SECTION 6. Non-Transferability of RSUs. Unless otherwise provided by the Committee in its discretion, RSUs may not be sold, assigned, alienated, transferred, pledged, attached or otherwise encumbered by the Participant. Any purported sale, assignment, alienation, transfer, pledge, attachment or other encumbrance of an RSU in violation of the provisions of this Section 6 shall be void.

SECTION 7. Responsibility for Taxes.

(a) Regardless of any action the Company or the Participant's employer, if other than the Company (the "Employer"), takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the RSUs, including, without limitation, the grant, vesting or settlement of the RSUs, the issuance of Shares on the relevant Vesting Date, the subsequent sale of Shares acquired pursuant to such issuance and the receipt of any dividends; and (ii) do not commit to and are under no obligation to structure the terms of the Award or any aspect of the RSUs to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company or its agent to satisfy any applicable withholding obligations with regards to Tax-Related Items by withholding a number of Shares to be issued upon settlement of the RSUs. If, for any reason, the Shares that would otherwise be deliverable to the Participant upon settlement of the RSUs would be insufficient to satisfy the tax withholding obligations, or if such withholding in Shares is problematic under applicable tax or securities law or there is a substantial likelihood that the use of such form of payment would result in adverse accounting treatment for the Company, the Participant authorizes (i) the Company and any brokerage firm determined acceptable to the Company to sell on the Participant's behalf a whole number of Shares from those Shares to be issued to the Participant as the Company determines to be appropriate to

generate cash proceeds sufficient to satisfy any applicable withholding obligations for Tax-Related Items, (ii) the Company, the Employer and any Affiliate to withhold an amount from the Participant's wages or other compensation or require the Participant to make a cash payment sufficient to fully satisfy any applicable withholding obligations for Tax-Related Items, and (iii) the Company, the Employer and any Affiliate to satisfy any applicable withholding obligations for Tax-Related Items by any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee.

(c) Depending on the withholding method, the Company may withhold or account for Tax-Related Items by considering statutory or other applicable withholding rates, including minimum or maximum rates, in the jurisdictions applicable to the Participant. In no event will the Company withhold less than the minimum or more than the maximum amount necessary to satisfy the withholding requirements in the applicable jurisdiction. In the event of over-withholding, the Participant may receive a refund of any over-withheld amount in cash (with no entitlement to the equivalent in Shares), or if not refunded, the Participant may seek a refund from the local tax authorities. If the obligation for Tax-Related Items is satisfied by withholding in Shares, the Participant will be deemed, for tax and/or social security contributions and other purposes, to have been issued the full number of Shares subject to the vested RSUs, notwithstanding that a number of Shares are held back solely for the purposes of paying the Tax-Related Items due as a result of any aspect of the Participant's participation in the Plan.

(d) The Participant shall pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of the Participant's participation in the Plan that cannot be satisfied by the means previously described. The Participant expressly acknowledges that the delivery of Shares pursuant to Section 3(b) above is conditioned on satisfaction of all Tax-Related Items in accordance with this Section 7, and that the Company may refuse to deliver the Shares if the Participant fails to comply with the Participant's obligations in connection with the Tax-Related Items.

SECTION 8. Consents and Legends.

(a) Consents. The Participant's rights in respect of the RSUs are conditioned on the receipt to the full satisfaction of the Committee of any required consents that the Committee may determine to be necessary or advisable (including, without limitation, the Participant's consent to the Company's supplying to any third-party recordkeeper of the Plan such personal information as the Committee deems advisable to administer the Plan, as may further be described to the extent applicable discussing applicable data privacy considerations in an addendum to this Award Agreement, as described in Section 19).

(b) Legends. The Company may affix to certificates for Shares issued pursuant to this Award Agreement any legend that the Committee determines to be necessary or advisable (including to reflect any restrictions to which the Participant may be subject under any applicable securities laws). The Company may advise the applicable transfer agent to place a stop order against any legended Shares.

SECTION 9. Nature of Award. As a condition to receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards of RSUs, or benefits in lieu of RSUs, even if RSUs have been granted in the past;

(c) all decisions with respect to future RSU or other awards, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the RSUs and the Shares subject to the RSUs, and the income from and value of same, are not intended to replace any pension rights or compensation;

(g) the RSUs and the Shares subject to the RSUs, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, holiday pay, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company, the Employer, or any Affiliate;

(h) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment or service agreement or relationship with the Company or any Affiliate;

(i) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(j) no claim or entitlement to compensation or damages shall arise from forfeiture of the RSUs resulting from termination of the Participant's employment or other service relationship by the Company or the Employer (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment agreement, if any);

(k) except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment or service relationship, the Participant's right to vest in the RSUs under the Plan, if any, will terminate effective as of the date the Participant is no longer actively providing services to the Company, the Employer or any Affiliate of the Company (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), and unless otherwise expressly provided in this Award Agreement or determined by the Company, the Participant's right to vest in the RSU under the Plan, if any, will terminate as of such date and will not be extended by any notice period (e.g., the Participant's period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively providing services for purposes of the RSUs (including whether the Participant may still be considered to be providing services while on a leave of absence);

(l) unless otherwise agreed with the Company, the RSUs and Shares subject to the RSUs, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate;

(m) the RSUs and the benefits under the Plan, if any, will not automatically transfer to a successor company in the case of a Change of Control or a merger, takeover, or transfer of liability of the Employer; and

(n) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant for the settlement of the RSUs or the subsequent sale of any Shares acquired upon settlement.

SECTION 10. **No Advice Regarding Grant**. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, or the Participant's acquisition or sale of the underlying Shares. The Participant understands and agrees that the Participant should consult with the Participant's own personal tax, legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 11. **Adjustments**. In the event of any change in the outstanding Shares by reason of any stock split, stock dividend, split-up, split-off, spin-off, recapitalization, merger, consolidation, rights offering, reorganization, combination or exchange of shares, sale by the Company of all or part of its assets, distribution to shareholders other than a normal cash dividend, or other extraordinary or unusual event occurring after the Grant Date and prior to the end of the vesting period, that affects the value of the RSUs or Shares, the number, class and kind of the securities subject to the RSUs, or the number of RSUs, as appropriate, shall be adjusted by the Committee to reflect the occurrence of such event.

SECTION 12. **Electronic Delivery**. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 13. **Successors and Assigns of the Company**. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 14. **Committee Discretion**. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 15. **Dispute Resolution**.

(a) Jurisdiction and Venue. Notwithstanding any provision in any employment agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its equivalent in the Participant's country of residence) to the applicable address set forth in Section 16 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 15(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in the Participant's employment agreement, if any, between the Participant and the Company, the Participant and the Company hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 15, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 16. **Notice**. All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 17. **Governing Law**. This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 18. **Headings**. Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 19. **Country-Specific or Other Addenda**.

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate the administration of the Plan; provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award.

(c) Any Addendum attached hereto shall be considered a part of this Award Agreement.

SECTION 20. **Severability**. The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 21. **Amendment of this Award Agreement**. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not, to the extent of such impairment, be effective without the Participant's consent (it being understood, notwithstanding the foregoing proviso, that this Award Agreement and the RSUs shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 22. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on the Participant's participation in the Plan, on the RSUs and on any Shares acquired under this Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 23. **Acceptance of Terms and Conditions for RSUs**. As a condition to receipt of this Award, the Participant confirms that he/she has read and understood the documents relating to this Award (i.e., the Plan, this Award Agreement, including any Addendum) and accepts the terms of those documents accordingly.

SECTION 24. **Counterparts**. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 25. **Code Section 409A**. The vesting and settlement of RSUs awarded pursuant to this Award Agreement are intended to either qualify for the "short-term deferral" exemption from Section 409A of the Code or to comply with Section 409A of the Code, as applicable, and the provisions of this Award Agreement will be interpreted, operated, and administered in a manner consistent with these intentions. Anything to the contrary in the Plan or this Award Agreement requiring the consent of the Participant notwithstanding, the Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Award Agreement to ensure that the RSUs qualify for exemption from or comply with Section 409A of the Code; provided, however, that the Company makes no representations that the RSUs will be exempt from or comply with Section 409A of the Code, and makes no undertaking to preclude Section 409A of the Code from applying to the RSUs, and the Company will have no liability to the Participant or any other party if a payment under this Award Agreement that is intended to be exempt from, or compliant with, Section 409A of the Code is not so exempt or compliant or for any action taken by the Committee with respect thereto. Notwithstanding anything to the contrary in the Plan, this Award Agreement or the Grant Notice, to the extent that the Participant is a Specified Employee, payment or distribution of any amounts with respect to the RSUs that are subject to Section 409A of the Code will be made as soon as practicable following the first business day of the seventh month following the Participant's Separation from Service from the Company and its Affiliates, or, if earlier, the date of the Participant's death.

SECTION 26. **Waiver**. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 27. **Insider Trading Restrictions/Market Abuse Laws**. The Participant acknowledges that he or she may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the Shares are listed and in applicable jurisdictions, including the United States, the Participant's country and the designated broker's country, that may affect his or her ability to accept, acquire, sell or otherwise dispose of Shares, rights to Shares (*e.g.*, RSUs) or rights linked to the value of Shares under the Plan during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before the Participant possessed inside information. Furthermore, the Participant could be

prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. The Participant acknowledges that it is his or her responsibility to comply with any applicable restrictions, and the Participant should consult his or her personal advisor on this matter.

SECTION 28. **Foreign Asset/Account, Exchange Control and Tax Reporting**. The Participant acknowledges that the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of Shares or cash (including dividends and the proceeds arising from the sale of Shares) derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 29. **Entire Agreement**. This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (RSU-012)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Award and that will apply to the Participant if he or she resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of September 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant's RSUs vest and/or the Participant sells any Shares acquired on a Vesting Date.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Consent to Personal Data Processing and Transfer. By accepting the Award via the Company's acceptance procedure, the Participant is declaring that he or she agrees with the data processing practices described herein and consents to the collection, processing and use of Personal Data (as defined below) by the Company and the transfer of Personal Data to the recipients mentioned herein, including recipients located in countries which do not adduce an adequate level of protection from a European (or other) data protection law perspective, for the purposes described herein.

(a) Declaration of Consent. The Participant understands that the Participant must review the following information about the processing of the Participant's personal data by or on behalf of the Company or the Employer as described in this Award Agreement and any materials related to the Award (the "Personal Data") and declare his or her consent. As regards the processing of the Participant's Personal Data in connection with the Plan and this Award Agreement, the Participant understands that the Company is the controller of the Participant's Personal Data.

(b) *Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for purposes of allocating Shares and implementing, administering and managing the Plan. The Personal Data processed by the Company includes, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock*

or equivalent benefits awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor. The legal basis for the processing of the Participant's Personal Data, where required, is the Participant's consent.

(c) *Stock Plan Administration Service Providers. The Participant understands that the Company transfers the Participant's Personal Data, or parts thereof, to (i) Fidelity Stock Plan Services, LLC (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Company's service providers will open an account for the Participant to receive and trade Shares acquired under the Plan and that the Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan.*

(d) *International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as Fidelity Stock Plan Services, LLC and My Equity Comp, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of the Participant's Personal Data is the Participant's consent.*

(e) *Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.*

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. The Participant understands that any participation in the Plan and his or her consent are purely voluntary. The Participant may deny or later withdraw his or her consent at any time, with future effect and for any or no reason. If the Participant denies or later withdraws his or her consent, the Company can no longer offer participation in the Plan or grant equity awards to the Participant or administer or maintain such awards, and the Participant will no longer be eligible to participate in the Plan. The Participant further understands that denial or withdrawal of his or her consent would not affect his or her status or salary as an employee or his or her career and that the Participant would merely forfeit the opportunities associated with the Plan.

(g) *Data Subject Rights. The data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.*

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

AUSTRALIA

TERMS AND CONDITIONS

Australian Offer Document. The Participant's right to participate in the Plan, vest in the RSUs, and receive the Shares underlying the RSUs granted under the Plan is subject to the terms and conditions stated in the Plan, the Australian Offer Document, the Award Agreement and this Addendum, all of which are intended to comply with the provisions of the Australian Corporations Act 2001, ASIC Regulatory Guide 49 and ASIC Class Order CO 14/1000.

RSUs Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Australia, the RSUs will be settled in Shares only. The RSUs do not provide any right for the Participant to receive a cash payment.

Tax Information. The Plan is a plan to which Subdivision 83A-C of the Income Tax Assessment Act 1997 (Cth) applies (subject to conditions in the Act).

NOTIFICATIONS

Exchange Control Notification. Exchange control reporting is required for cash transactions exceeding A$10,000 and international fund transfers. If there is an Australian bank assisting with the transaction, the Australian bank will file the report for the Participant. If there is no Australian bank involved in the transaction, the Participant must file the report.

BELGIUM

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the RSUs on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report securities held (including Shares) or any bank or brokerage accounts opened and maintained outside Belgium on the Participant's annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium the details of such accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

Stock Exchange Tax. A stock exchange tax applies to transactions executed by a Belgian resident through a non-Belgian financial intermediary, such as a U.S. broker. The stock exchange tax will likely apply when Shares acquired upon vesting of the RSUs are sold. The Participant should consult with his or her personal tax advisor for additional details on his or her obligations with respect to the stock exchange tax.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting the Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the issuance of Shares upon vesting of the RSUs, the subsequent sale of Shares issued in settlement of the RSUs, and the receipt of any dividends.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that (i) he or she is making an investment decision, (ii) the Shares will be issued to the Participant only if the vesting conditions are met, and (iii) the value of the underlying Shares is not fixed and may increase or decrease in value over the vesting period without compensation to the Participant.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including Shares acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to RSUs may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

RSUs Payable in Shares Only. Notwithstanding any discretion in the Plan, due to securities law considerations in Canada, the RSUs will be settled in Shares only. The RSUs do not provide any right for the Participant to receive a cash payment.

Termination of Employment. The following provision replaces Section 9(l) of the Award Agreement:

Except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment (regardless of the reason for such termination and whether or not later found invalid, unlawful, or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), the Participant's right to vest in the RSUs under the Plan, if any, will terminate effective as of the date that is the earlier of (i) the date on which the Participant's employment is terminated by the Company or the Employer, (ii) the date on which the Participant receives a notice of termination of employment from the Company or the Employer, or (iii) the date on which the Participant is no longer providing active services to the Company or Employer, regardless of any period during which notice, pay in lieu of notice or related payments or damages are provided or required to be provided under local law. The Participant will not earn or be entitled to

any pro-rated vesting for that portion of time before the date on which the Participant's right to vest terminates, nor will the Participant be entitled to any compensation for lost vesting. In the event the date on which the Participant is no longer actively providing services cannot be reasonably determined under the terms of this Award Agreement, the Committee shall have the exclusive discretion to determine when the Participant is no longer employed for purposes of the RSUs (including whether the Participant may still be considered to be providing services while on a leave of absence).

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Securities Law Notification. The Participant will not be permitted to sell or otherwise dispose of the Shares acquired under the Plan within Canada. The Participant will be permitted to sell or dispose of any Shares only if such sale or disposal takes place outside Canada through the facilities of the stock exchange on which the Shares are traded.

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada and RSUs and Shares acquired under the Plan) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). Thus, unvested RSUs must be reported (generally at a nil cost) if the C$100,000 cost threshold is exceeded by other foreign specified property the Participant holds. When Shares are acquired, their cost generally is the adjusted cost base ("ACB") of the Shares. The ACB typically equals the fair market value of the Shares at the time of acquisition, but if the Participant owns other Shares, the ACB may have to be averaged with the ACB of the other Shares. The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements.

CHILE

NOTIFICATIONS

Securities Law Notification. This grant of RSUs constitutes a private offering of securities in Chile effective as of the Grant Date. This offer of RSUs is made subject to general ruling n° 336 of the Chilean Commission for the Financial Market ("CMF"). The offer refers to securities not registered at the securities registry or at the foreign

securities registry of the CMF, and, therefore, such securities are not subject to oversight of the CMF. Given that the RSUs are not registered in Chile, the Company is not required to provide public information about the RSUs or the Shares in Chile. Unless the RSUs and/or the Shares are registered with the CMF, a public offering of such securities cannot be made in Chile.

Esta Oferta de Restricted Stock Units ("RSUs") constituye una oferta privada de valores en Chile y se inicia en la Fecha de la Oferta. Esta oferta de RSUs se acoge a las disposiciones de la Norma de Carácter General Nº 336 ("NCG 336") de la Comisión para el Mercado Financiero de Chile ("CMF"). Esta oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la CMF, por lo que tales valores no están sujetos a la fiscalización de ésta. Por tratarse de valores no inscritos en Chile no existe la obligación por parte de la Compañía de entregar en Chile información pública respecto de los mismos. Estos valores no podrán ser objeto de oferta pública en Chile mientras no sean inscritos en el Registro de Valores correspondiente.

Exchange Control Notification. The Participant is not required to repatriate funds obtained from the sale of Shares or the receipt of any dividends. However, if the Participant decides to repatriate such funds, the Participant must do so through the Formal Exchange Market ("Mercado Cambiario Formal") if the amount of the funds exceeds US$10,000. In such case, the Participant must report the payment to a commercial bank or registered foreign exchange office receiving the funds.

If the Participant's aggregate investments held outside Chile meets or exceeds US$5,000,000 (including the investments made under the Plan), the Participant must inform the Central Bank ("Banco Central de Chile") with updated information accumulated for a three-month period within and no later than the first 45 calendar days following the closing of the months of March, June and September and no later than 60 calendar days following the closing of the month of December. Annex 3.1 of Chapter XII of the Foreign Exchange Regulations must be used to file this report.

Please note that exchange control regulations in Chile are subject to change. The Participant should consult with his or her personal legal advisor regarding any exchange control obligations that the Participant may have prior to the vesting of the RSUs.

Annual Tax Reporting Obligation. The Chilean Internal Revenue Service ("CIRS") requires Chilean residents to report the details of their foreign investments on an annual basis. Foreign investments include Shares acquired under the Plan. Further, if the Participant wishes to receive a credit against his or her Chilean income taxes for any taxes paid abroad, the Participant must also report the payment of taxes abroad to the CIRS. These reports must be submitted electronically through the CIRS website at www.sii.cl in accordance with applicable deadlines. In addition, Shares acquired upon settlement of the RSUs must be registered with the CIRS's Foreign Investment Registry. The Participant should consult with his or her personal legal and tax advisors to ensure compliance with applicable requirements.

FRANCE

TERMS AND CONDITIONS

RSUs Not Tax-Qualified. The Participant understands that the RSUs are not intended to be French tax-qualified pursuant to Section L. 225-197 1 to L. 225-197 6 of the French Commercial Code, as amended.

Language Consent. By accepting the RSUs, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. The Participant accepts the terms of those documents accordingly.

En acceptant ces <<RSUs>>, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities (e.g., Shares) or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in connection with the sale of securities or any dividends received in relation to Shares in excess of €12,500 must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

HONDURAS

There are no country-specific provisions.

INDIA

NOTIFICATIONS

Exchange Control Notification. The Participant understands that the RSUs are subject to compliance with the exchange control requirements of the Reserve Bank of India. The Participant understands that he or she must repatriate and convert into local currency the proceeds from the sale of Shares acquired under the Plan within ninety (90) days of receipt and any proceeds from dividends paid on Shares held within one-hundred eighty (180) days of receipt, or within other such period of time as may be required under applicable regulations. The Participant will receive a foreign inward remittance certificate ("FIRC") from the bank where the Participant deposits the foreign currency. The Participant should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or the Employer requests proof of repatriation. The Participant should consult with his or her personal legal advisor to ensure compliance with the applicable requirements.

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets (including Shares held outside India) in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (i.e., the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

NOTIFICATIONS

Exchange Control Notification. Foreign exchange activity is subject to certain reporting requirements. For foreign currency transactions exceeding US$25,000, the underlying document of that transaction will have to be submitted to the relevant local bank. In addition, if proceeds from the sale of Shares or dividends are repatriated to Indonesia, the Indonesian bank handling the transaction is responsible for submitting a report to Bank Indonesia. The Participant should be prepared to provide information, data and/or supporting documents upon request from the bank for purposes of preparing the report.

Foreign Asset/Account Reporting Notification. The Participant has the obligation to report his or her worldwide assets (including foreign accounts and Shares acquired under the Plan) in his or her annual individual income tax return. In addition, if there is a change of position of any foreign asset the Participant holds (including Shares acquired under the Plan), the Participant must report this change in position (e.g., the sale of Shares) to Bank of Indonesia. The report should be submitted online through Bank Indonesia's website no later than the 15th day of the month following the month in which the activity occurred.

JAPAN

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. The Participant is required to report details of any assets held outside Japan as of December 31, including Shares, to the extent such assets have a total net fair market value exceeding ¥50,000,000. Such report will be due from the Participant by March 15 each year. The Participant is responsible for complying with this reporting obligation and should consult with his or her personal tax advisor as to whether the Participant will be required to report the details of RSUs or Shares he or she holds.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy Consent. The following provision replaces the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in the Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan. ***The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, the fact and conditions of the Participant's participation in the Plan, details of all RSUs or any other entitlement to shares of stock awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.*** ***The Participant also authorizes any transfer of Data, as may be required, to such stock plan service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan and/or with whom any Shares acquired upon vesting of the RSUs are deposited. The Participant acknowledges that these recipients may be located in the Participant's country or elsewhere, and that the recipient's country (e.g., the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative.***	***Peserta dengan ini secara jelas, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan mana-mana Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Pesertadalam Pelan tersebut.*** ***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Majikan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya , alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa syer dalam saham atau jawatan pengarah yang dipegang dalam Syarikat, fakta dan syarat-syarat penyertaan Peserta dalam Pelan, butir-butir semua opsyen atau apa-apa hak lain untuk syer dalam saham yang dianugerahkan, dibatalkan, dilaksanakan, terletak hak, tidak diletak hak ataupun bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.*** ***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan pelan saham sebagaimana yang dipilih oleh Syarikat dari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelandan/atau dengan sesiapa yang mendepositkan Saham yang diperolehi melalui pelaksanaan Opsyen ini. Peserta mengakui bahawa penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negara Peserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan***

The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan. The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Industri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Company and the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future RSUs or other equity awards to the Participant or administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.***	***Peserta dalam Pelan untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia di lokasi masing-masing, di mana butir-butir hubungannya adalah:*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Industri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Selanjutnya, Peserta memahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , status sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan opsyen pada masa depan atau anugerah ekuiti lain kepada Peserta atau mentadbir atau mengekalkan anugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan,Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya.***

NOTIFICATIONS

Director Notification Obligation. If the Participant is a director of an Affiliate, the Participant is subject to certain notification requirements under the Malaysian Companies Act, 2016. Among these requirements is an obligation on the Participant's part to notify the Malaysian Affiliate in writing when the Participant acquires an interest (e.g., RSUs or Shares) in the Company or any related companies. In addition, the Participant must notify the Malaysian Affiliate when the Participant sells Shares (including Shares acquired under the Plan) or the shares of any related company. These notifications must be made within 14 days of acquiring or disposing of any interest in the Company or any related company.

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that he or she understands and agrees that: (a) the RSUs are not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan or the acquisition of Shares does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Award, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 9 of the Award Agreement, in which the following is clearly described and established: (a) participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; (c) participation in the Plan is voluntary; and (d) the Company and its Affiliates are not responsible for any decrease in the value of the Shares underlying the RSUs.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar el Otorgamiento, el Beneficiario reconoce y acepta que: (a) las Unidades no se encuentran relacionadas con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Beneficiario.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Beneficiario.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600, Tempe, Arizona 85281 United States of America, es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Beneficiario y la Compañía, ya que el Beneficiario participa únicamente en de forma comercial y que su único Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Beneficiario y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar el Otorgamiento, el Beneficiario reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Beneficiario reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 9 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación en el Plan es voluntaria; y (d) que la Compañía, así como sus Afiliadas, no son responsables por cualquier detrimento en el valor de las acciones que integran las Unidades.

Finalmente, el Beneficiario acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the RSU, the Participant acknowledges that: (i) the RSU is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the RSU is not intended to replace any pension rights or compensation.

PHILIPPINES

NOTIFICATIONS

Securities Law Information. This offering is subject to exemption from the requirements of securities registration with the Philippines Securities and Exchange Commission, under Section 10.1 (k) of the Philippine Securities Regulation Code. Section 10.1(k) of the Philippine Securities Regulation Code provides as follows:

"Section 10.1 Exempt Transactions - The requirement of registration under Subsection 8.1 shall not apply to the sale of any security in any of the following section;

[. . .]

"(k) The sale of securities by an issuer to fewer than twenty (20) persons in the Philippines during any twelve-month period."

THE SECURITIES BEING OFFERED OR SOLD HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FURTHER OFFER OR SALE THEREOF IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

The Participant acknowledges he or she is permitted to dispose or sell Shares acquired under the Plan provided the offer and resale of the Shares takes place outside the Philippines through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the NASDAQ Global Select Market in the United States of America.

SINGAPORE

NOTIFICATIONS

Securities Law Notification. The RSUs are being granted to the Participant pursuant to the "Qualifying Person" exemption under section 273(1)(f) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore. The Participant should note that such RSU grant is subject to section 257 of the SFA and the Participant will not be able to make any subsequent sale in Singapore, or any offer of such subsequent sale of the Shares underlying the Award, unless such sale or offer in Singapore is made (i) more than six months from the Grant Date, (ii) pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the SFA, or (iii) pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Singapore, and Shares acquired under the Plan may be sold through this exchange.

Director Notification Requirement. If the Participant is a director, associate director or shadow director of a Singaporean Affiliate, the Participant is subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Singapore Affiliate in writing of an interest (e.g., unvested RSUs, Shares, etc.) in the Company or any Affiliate within two (2) business days of (i) its acquisition or disposal, (ii) any change in previously disclosed interest (e.g., when Shares acquired at vesting are sold), or (iii) becoming a director, associate director or shadow director.

THAILAND

NOTIFICATIONS

Exchange Control Notification. Thai resident Participants realizing US$1,000,000 or more in a single transaction from the sale of Shares issued to the Participant following the vesting and settlement of the RSUs must repatriate the proceeds to Thailand and then convert such proceeds to Thai Baht or deposit the proceeds into a foreign currency account opened with any commercial bank in Thailand within 360 days of repatriation. The Participant must provide details of the transaction (i.e., identification information and purpose of the transaction) to the receiving bank. If the Participant fails to comply with these obligations, the Participant may be subject to penalties assessed by the Bank of Thailand. The Participant should consult his or her personal advisor before taking action with respect to the remittance of proceeds from the sale of Shares into Thailand. The Participant is responsible for ensuring compliance with all exchange control laws in Thailand.

TURKEY

NOTIFICATIONS

Securities Law Notification. Under Turkish law, the Participant is not permitted to sell any Shares acquired under the Plan in Turkey. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Turkey, under the ticker symbol "FSLR" and the Shares may be sold through this exchange.

Exchange Control Notification. Turkish residents are permitted to purchase and sell securities or derivatives traded on exchanges abroad only through a financial intermediary licensed in Turkey. Therefore, the Participant may be required to appoint a Turkish broker to assist the Participant with the sale of the Shares acquired under the Plan. The Participant should consult his or her personal legal advisor before selling any Shares acquired under the Plan to confirm the applicability of this requirement to the Participant.

UNITED ARAB EMIRATES ("UAE")

NOTIFICATIONS

Securities Law Notification. The RSUs are available only for select employees of the Company and its Affiliates and is in the nature of providing employee incentives in the UAE. This Award Agreement, the Addendum, the Plan and other incidental communication materials are intended for distribution only to eligible employees for the purposes of an employee compensation or reward scheme, and must not be delivered to, or relied on, by any other person.

The Dubai Creative Clusters Authority, Emirates Securities and Commodities Authority and/or the Central Bank of the United Arab Emirates have no responsibility for reviewing or verifying any documents in connection with the RSUs or this Award Agreement. Further, neither the Ministry of Economy nor the Dubai Department of Economic Development have approved this Award Agreement nor taken steps to verify the information set out in it, and have no responsibility for it.

The securities to which this Award Agreement relates may be illiquid and/or subject to restrictions on their resale. Individuals should conduct their own due diligence on the securities.

Residents of the UAE who do not understand or have questions regarding this Award Agreement, the Addendum or the Plan should consult an authorized financial adviser.

EXHIBIT 10.50

Form OPT-011

OPTION AWARD AGREEMENT under the FIRST SOLAR, INC. 2020 OMNIBUS INCENTIVE COMPENSATION PLAN, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form OPT-011 by reference.

This Option Award Agreement including any addendum hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of an award of options (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan (the "Plan") covering one or more options ("Options") to purchase the number of shares of common stock of First Solar, Inc., par value $.001 (each a "Share") set forth in the Grant Notice, subject to the all terms and conditions of this Award Agreement and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 15 OF THIS AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions**. The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 19	"Options"	Paragraph 2
"Award"	Paragraph 2	"Participant"	Paragraph 1
"Award Agreement"	Paragraph 2	"Plan"	Paragraph 2
"Business Day"	Section 16	"Share"	Paragraph 2
"Company"	Paragraph 1	"Tax-Related Items"	Section 7
"Employer"	Section 7	"Vesting Date"	Section 3(a)
"Grant Date"	Paragraph 2		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan.

SECTION 3. **Vesting and Exercise of Options**.

(a) Vesting. Except as otherwise determined by the Committee in its sole discretion, on each vesting date set forth in the Grant Notice (each a "Vesting Date"), the Option described in the Grant Notice shall be vested and exercisable with respect to the number of Shares that corresponds to the Vesting Date on the Grant Notice, provided that the Participant is actively employed by the Company or an Affiliate on the relevant Vesting Date.

(b) Exercise of Options. Options, to the extent that they are vested and not previously expired or forfeited as described below in Section 4, may be exercised, in whole or in part (but for the purchase of whole Shares only), by delivery to the Company (i) of a written or electronic notice, complying with the applicable procedures established by the Committee or the Company, stating the number of Shares for which the Option is being exercised, and (ii) full payment, in accordance with Section 6(b) of the Plan, of the aggregate Exercise Price for the Shares with respect to which the Options are thereby exercised. The notice shall be submitted by the Participant or any other person then entitled to exercise the Options. As soon as practicable following the exercise and full payment of the Exercise Price for the Shares with respect to which the Options are exercised, the Company shall deliver to the Participant or the Participant's legal representative, as applicable, one Share for each Share for which the Options have been exercised; provided, however, that the delivery of Shares is further conditioned upon Participant's satisfaction of any applicable Tax-Related Items (as defined in Section 7 below) in accordance with Section 9(e) of the Plan.

SECTION 4. Expiration and Forfeiture of Options. Unless the Committee determines otherwise, or unless otherwise provided in the Grant Notice, a written agreement between the Company and the Participant or any other plan, policy or program of the Company then in effect,

(a) Vested but unexercised Options will expire (i) automatically on the date the Participant's employment or service relationship with the Company or any Affiliate is terminated for Cause; (ii) six months after the Participant's employment or service relationship terminates due to death or the Participant's Disability; or (iii) 180 days following the termination of the Participant's employment or service relationship for any other reasons. Notwithstanding any provision of this Award Agreement or any agreement between the Participant and the Company or any Affiliate to the contrary, all Options will automatically expire on the tenth anniversary of the Grant Date.

(b) Unvested Options will expire on the date employment or service with the Company and its Affiliates terminates for any reason.

(c) Upon expiration of the Options, all the Participant's rights with respect to such Options shall immediately terminate, and the Participant will be entitled to no further payments or benefits with respect thereto.

SECTION 5. Voting Rights; Dividend Equivalents. The Participant shall have no voting rights and shall not be entitled to receive any dividends or other distributions with respect to Shares covered by an Option prior to the date the Participant has exercised the Option with respect to such Shares and paid the full Exercise Price therefor.

SECTION 6. Options Not Transferable. Unless otherwise provided by the Committee in its discretion, Options may not be sold, assigned, alienated, transferred, pledged, attached or otherwise encumbered except as provided in Section 9(a) of the Plan. Any purported sale, assignment, alienation, transfer, pledge, attachment or other encumbrance of an Option in violation of the provisions of this Section 6 and Section 9(a) of the Plan shall be void.

SECTION 7. Responsibility for Taxes.

(a) Regardless of any action the Company or the Participant's employer, if other than the Company (the "Employer"), takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Options, including, without limitation, the grant, vesting or

exercise of the Options, the issuance of Shares upon exercise of the Options, the subsequent sale of Shares acquired pursuant to such issuance and the receipt of any dividends; and (ii) do not commit to and are under no obligation to structure the terms of the Award or any aspect of the Options to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company and/or the Employer, at their discretion, to satisfy any applicable withholding obligations with respect to all Tax-Related Items by one or a combination of the following:

(i) withholding from the Participant's wages or other cash compensation paid to the Participant by the Company and/or the Employer; or

(ii) withholding from proceeds of the sale of Shares acquired upon exercise of the Options, either through a voluntary sale or through a mandatory sale arranged by the Company (on the Participant's behalf pursuant to this authorization); or

(iii) by requiring direct payment from the Participant in cash (or its equivalent); or

(iv) by any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee.

(c) The Company may withhold or account for Tax-Related Items by considering statutory other applicable withholding rates, including minimum or maximum rates in the jurisdictions applicable to the Participant. In no event will the Company withhold less than the minimum or more than the maximum amount necessary to satisfy the withholding requirements in the applicable jurisdiction. In the event of over-withholding, the Participant may receive a refund of any over-withheld amount in cash (with no entitlement to the equivalent in Shares), or if not refunded, the Participant may seek a refund from the local tax authorities.

(d) Finally, the Participant shall pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of the Participant's participation in the Plan that cannot be satisfied by the means previously described. The Participant expressly acknowledges that the delivery of Shares pursuant to Section 3(b) above is conditioned on satisfaction of all Tax-Related Items in accordance with this Section 7, and that the Company may refuse to deliver the Shares if the Participant fails to comply with the Participant's obligations in connection with the Tax-Related Items.

SECTION 8. Consents and Legends.

(a) Consents. The Participant's rights in respect of the Options are conditioned on the receipt to the full satisfaction of the Committee of any required consents that the Committee may determine to be necessary or advisable (including, without limitation, the Participant's consent to the Company's supplying to any third-party recordkeeper of the Plan such personal information as the Committee deems advisable to administer the Plan, as may further be described to the extent applicable discussing applicable data privacy considerations in an addendum to this Award Agreement, as described in Section 19).

(b) Legends. The Company may affix to certificates for Shares issued pursuant to the exercise of Options covered by this Award Agreement any legend that the Committee determines to be necessary or advisable

(including to reflect any restrictions to which the Participant may be subject under any applicable securities laws). The Company may advise the applicable transfer agent to place a stop order against any legended Shares.

SECTION 9. **Nature of Award**. As a condition to receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards of Options, or benefits in lieu of Options, even if Options have been granted in the past;

(c) all decisions with respect to future Options or other awards, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the Options and any Shares issued upon exercise of the Options, and the income from and value of same, are not intended to replace any pension rights or compensation;

(g) the Options and any Shares issued upon exercise of the Options, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, holiday pay, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company, the Employer, or any Affiliate;

(h) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment or service agreement or relationship with the Company or any Affiliate;

(i) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(j) if the Shares underlying the Options do not increase in value, the Options will have no value;

(k) if the Participant exercises the Option and acquires Shares, the value of such Shares may increase or decrease in value, even below the Exercise Price;

(l) no claim or entitlement to compensation or damages shall arise from forfeiture of the Options resulting from termination of the Participant's employment or other service relationship by the Company or the Employer (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment agreement, if any);

(m) the Committee shall have the exclusive discretion to determine when the Participant is no longer actively employed for purposes of the Options, including whether the Participant may be considered to be providing services while on a leave of absence;

(n) unless otherwise agreed with the Company, the Options and the benefits evidenced by this Award Agreement, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate; and

(o) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant pursuant to the exercise of the Options or the subsequent sale of any Shares acquired upon exercise.

SECTION 10. **No Advice Regarding Grant**. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, or the Participant's acquisition or sale of the underlying Shares. The Participant understands and agrees that the Participant should consult with the Participant's own personal tax, legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 11. **Adjustments**. In the event of any change in the outstanding Shares by reason of any stock split, stock dividend, split-up, split-off, spin-off, recapitalization, merger, consolidation, rights offering, reorganization, combination or exchange of shares, sale by the Company of all or part of its assets, distribution to shareholders other than a normal cash dividend, or other extraordinary or unusual event occurring after the Grant Date and prior to the end of the vesting period, that affects the value of the Options or Shares, the number, class and kind of the securities subject to the Options, or the number of Options, as appropriate, shall be adjusted by the Committee to reflect the occurrence of such event.

SECTION 12. **Electronic Delivery**. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 13. **Successors and Assigns of the Company**. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 14. **Committee Discretion**. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 15. **Dispute Resolution**.

(a) Jurisdiction and Venue. Notwithstanding any provision in any written or oral agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its equivalent in the Participant's country of residence) to the applicable address set forth in Section 16 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 15(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts

of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in any written or oral agreement between the Participant and the Company or any Affiliate, the Participant and the Company or its Affiliate hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 15, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 16. **Notice**. All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 17. **Governing Law**. This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 18. **Headings**. Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 19. **Country-Specific or Other Addenda**.

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate

the administration of the Plan; and provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award.

(c) Any Addenda attached hereto shall be considered a part of this Award Agreement.

SECTION 20. **Severability**. The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 21. **Amendment of this Award Agreement**. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not to that extent be effective without the Participant's consent (it being understood, notwithstanding the foregoing provision, that this Award Agreement and the Options shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 22. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on the Participant's participation in the Plan, on the Options and on any Shares acquired under this Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 23. **Acceptance of Terms and Conditions for Options**. As a condition to receipt of this Option Award, the Participant confirms that he/she has read and understood the documents relating to this Award (i.e., the Plan, this Award Agreement, including any Addendum). The Participant accepts the terms of those documents accordingly.

SECTION 24. **Counterparts**. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 25. **Code Section 409A**. The Options awarded pursuant to this Award Agreement are intended to be exempt from or comply with Section 409A of the Code, and the provisions of this Award Agreement will be interpreted, operated, and administered in a manner consistent with these intentions. Anything to the contrary in the Plan or this Award Agreement requiring the consent of the Participant notwithstanding, the Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Award Agreement to ensure that the Options qualify for exemption from or comply with Section 409A of the Code; provided, however, that the Company makes no representations that the Options will be exempt from or comply with Section 409A of the Code, and makes no undertaking to preclude Section 409A of the Code from applying to the Options, and the Company will have no liability to the Participant or any other party if a payment under this Award Agreement that is intended to be exempt from, or compliant with, Section 409A of the Code is not so exempt or compliant or for any action taken by the Committee with respect thereto.

SECTION 26. **Waiver**. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 27. **Insider Trading Restrictions/Market Abuse Laws**. The Participant acknowledges that the Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the Shares are listed and in applicable jurisdictions, including the United States, the Participant's country and the designated broker's country, which may affect his or her ability to accept, acquire, sell or otherwise dispose of

Shares, rights to Shares (*e.g.*, Options) or rights linked to the value of Shares under the Plan during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in the applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before the Participant possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. The Participant acknowledges that it is his or her responsibility to comply with any applicable restrictions, and the Participant should consult his or her personal advisor on this matter.

SECTION 28. **Foreign Asset/Account, Exchange Control and Tax Reporting**. The Participant acknowledges that the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of Shares or cash (including dividends and the proceeds arising from the sale of Shares) derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 29. **Entire Agreement.** This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (OPT-011)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Award and that will apply to the Participant if he or she resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of September 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant's Options are granted, vest and/or the Participant exercises the Options or sells any Shares issued upon exercise of the Options.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Consent to Personal Data Processing and Transfer. By accepting the Award via the Company's acceptance procedure, the Participant is declaring that he or she agrees with the data processing practices described herein and consents to the collection, processing and use of Personal Data (as defined below) by the Company and the transfer of Personal Data to the recipients mentioned herein, including recipients located in countries which do not adduce an adequate level of protection from a European (or other) data protection law perspective, for the purposes described herein.

(a) Declaration of Consent. The Participant understands that the Participant must review the following information about the processing of the Participant's personal data by or on behalf of the Company or the Employer as described in this Award Agreement and any materials related to the Award (the "Personal Data") and declare his or her consent. As regards the processing of the Participant's Personal Data in connection with the Plan and this Award Agreement, the Participant understands that the Company is the controller of the Participant's Personal Data.

(b) Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for purposes of allocating Shares and implementing, administering and managing the Plan. The Personal Data processed by the Company includes, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock

or equivalent benefits awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor. The legal basis for the processing of the Participant's Personal Data, where required is the Participant's consent.

(c) Stock Plan Administration Service Providers. The Participant understands that the Company transfers the Participant's Personal Data, or parts thereof, to (i) Fidelity Stock Plan Services, LLC (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Company's service providers will open an account for the Participant to receive and trade Shares acquired under the Plan and that the Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan.

(d) International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as Fidelity Stock Plan Services, LLC and My Equity Comp, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of the Participant's Personal Data is the Participant's consent.

(e) Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. The Participant understands that any participation in the Plan and his or her consent are purely voluntary. The Participant may deny or later withdraw his or her consent at any time, with future effect and for any or no reason. If the Participant denies or later withdraws his or her consent, the Company can no longer offer participation in the Plan or grant equity awards to the Participant or administer or maintain such awards, and the Participant will no longer be eligible to participate in the Plan. The Participant further understands that denial or withdrawal of his or her consent would not affect his or her status or salary as an employee or his or her career and that the Participant would merely forfeit the opportunities associated with the Plan.

(g) Data Subject Rights. The data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

BELGIUM

TERMS AND CONDITIONS

Taxation of Options. The Participant will not be permitted to accept the Option within 60 days of the Grant Date which will be considered the "offer date" for purposes of the running of the 60-day period. Therefore, the Option will not be subject to Belgian tax until it is exercised by the Participant.

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the Award on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report any securities (e.g., the Shares) or bank or brokerage accounts opened and maintained outside Belgium on his or her annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium the details of such accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

Stock Exchange Tax. A stock exchange tax applies to transactions executed by a Belgian resident through a non-Belgian financial intermediary, such as a U.S. broker. The stock exchange tax will likely apply when Options are exercised and when Shares acquired upon exercise of the Options are sold. The Participant should consult with his or her personal tax advisor for additional details on his or her obligations with respect to the stock exchange tax.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting this Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the issuance of Shares upon exercise of the Options, the subsequent sale of Shares obtained pursuant to the Options, and the receipt of any dividends.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that (i) he or she is making an investment decision, (ii) he or she will be entitled to exercise the Option and receive Shares only if the vesting conditions are met, and (iii) the value of the underlying Shares is not fixed and may increase or decrease in value over the vesting period without compensation to the Participant.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including Shares acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In

addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to the Options may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

Termination of Employment. The following provision replaces Section 9(n) of the Award Agreement:

Except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment (regardless of the reason for such termination and whether or not later found invalid, unlawful or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), the Participant's right to vest in or exercise the Options under the Plan, if any, will terminate effective as of the date that is the earlier of (i) the date on which the Participant's employment is terminated by the Company or the Employer, (ii) the date on which the Participant receives a notice of termination of employment from the Company or the Employer, or (iii) the date on which the Participant is no longer providing active services to the Company or Employer, regardless of any period during which notice, pay in lieu of notice or related payments or damages are provided or required to be provided under local law. The Participant will not earn or be entitled to any pro-rated vesting for that portion of time before the date on which the Participant's right to vest terminates, nor will the Participant be entitled to any compensation for lost vesting. In the event the date on which the Participant is no longer actively providing services cannot be reasonably determined under the terms of this Award Agreement, the Committee shall have the exclusive discretion to determine when the Participant is no longer employed for purposes of the Options (including whether the Participant may still be considered to be providing services while on a leave of absence).

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Securities Law Notification. The Participant will not be permitted to sell or otherwise dispose of the Shares acquired under the Plan within Canada. The Participant will be permitted to sell or dispose of any Shares only if such sale or disposal takes place outside Canada through the facilities of the stock exchange on which the Shares are traded.

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada and the Options and Shares acquired under the Plan) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). Thus, unvested Options must be reported (generally at a nil cost) if the C$100,000 cost threshold is exceeded by other foreign specified property the Participant holds. When Shares are acquired, their cost generally is the adjusted cost base ("ACB") of the Shares. The ACB typically equals the fair market value of the Shares at the time of acquisition, but if the Participant owns other Shares, the ACB may have to be averaged with the ACB of the other Shares. The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements

CHILE

NOTIFICATIONS

Securities Law Notification. This grant of Options constitutes a private offering of securities in Chile effective as of the Grant Date. This offer of Options is made subject to general ruling n° 336 of the Chilean Commission for the Financial Market ("CMF"). The offer refers to securities not registered at the securities registry or at the foreign securities registry of the CMF, and, therefore, such securities are not subject to oversight of the CMF. Given that the Options are not registered in Chile, the Company is not required to provide public information about the Options or the Shares in Chile. Unless the Options and/or the Shares are registered with the CMF, a public offering of such securities cannot be made in Chile.

Esta Oferta de las Opciónes constituye una oferta privada de valores en Chile y se inicia en la Fecha de la Oferta. Esta oferta de las Opciónes se acoge a las disposiciones de la Norma de Carácter General Nº 336 ("NCG 336") de la Comisión para el Mercado Financiero de Chile ("CMF"). Esta oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la CMF, por lo que tales valores no están sujetos a la fiscalización de ésta. Por tratarse de valores no inscritos en Chile no existe la obligación por parte de la Compañía de entregar en Chile información pública respecto de los mismos. Estos valores no podrán ser objeto de oferta pública en Chile mientras no sean inscritos en el Registro de Valores correspondiente.

Exchange Control Notification. It is the Participant's responsibility to ensure compliance with exchange control requirements in Chile when the value of the Participant's transaction is in excess of US$10,000. If the Options are exercised using a cashless exercise method and the aggregate value of the exercise price exceeds US$10,000, then the Participant must sign directly inform the Central Bank ("*Banco Central de Chile*") of the transaction.

The Participant is not required to repatriate funds obtained from the sale of Shares or the receipt of any dividends. However, if the Participant decides to repatriate such funds, the Participant must do so through the Formal Exchange Market ("*Mercado Cambiario Formal*") if the amount of the funds exceeds US$10,000. In such case, the Participant must report the payment to a commercial bank or registered foreign exchange office receiving the funds.

If the Participant's aggregate investments held outside Chile meets or exceeds US$5,000,000 (including the investments made under the Plan), the Participant must inform the Central Bank with updated information

accumulated for a three-month period within and no later than the first 45 calendar days following the closing of the months of March, June and September and no later than 60 calendar days following the closing of the month of December. Annex 3.1 of Chapter XII of the Foreign Exchange Regulations must be used to file this report.

Please note that exchange control regulations in Chile are subject to change. The Participant should consult with his or her personal legal advisor regarding any exchange control obligations that the Participant may have prior to the exercising the Options.

Annual Tax Reporting Obligation. The Chilean Internal Revenue Service ("CIRS") requires Chilean residents to report the details of their foreign investments on an annual basis. Foreign investments include Shares acquired under the Plan. Further, if the Participant wishes to receive a credit against his or her Chilean income taxes for any taxes paid abroad, the Participant must also report the payment of taxes abroad to the CIRS. These reports must be submitted electronically through the CIRS website at www.sii.cl in accordance with applicable deadlines. In addition, Shares acquired upon exercise of Options must be registered with the CIRS's Foreign Investment Registry. The Participant should consult with his or her personal legal and tax advisors to ensure compliance with applicable requirements.

FRANCE

Options Not Tax-Qualified. The Option is not intended to qualify for specific tax and social security treatment applicable to stock options granted under Section L.225-177 to L.225-186-1 of the French Commercial Code, as amended.

Language Consent. By accepting the Option, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. The Participant accepts the terms of those documents accordingly.

En acceptant cette Option, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities (e.g., Shares) or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in excess of €12,500 in connection with the sale of securities (e.g., Shares), dividends received in relation to Shares or the exercise of Options must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

HONDURAS

There are no country-specific provisions.

INDIA

TERMS AND CONDITIONS

Exercise of Options. This provision supplements Section 3(b) of the Award Agreement:

Due to regulatory requirements in India, upon the exercise of the Options, any Shares to be issued to the Participant will be immediately sold in a same-day sale transaction. In no case may the Participant exercise and hold Shares following the exercise of the Options. The Participant agrees that the Company is authorized to instruct its designated broker to assist with the mandatory sale of such Shares (on the Participant's behalf pursuant to this authorization) and the Participant expressly authorizes the Company's designated broker to complete the sale of such Shares. The Participant acknowledges that the Company's designated broker is under no obligation to arrange for the sale of the Shares at any particular price. Upon the sale of the Shares, the Company agrees to pay the Participant the cash proceeds from the sale, less any brokerage fees or commissions and subject to any obligation to satisfy Tax-Related Items.

NOTIFICATIONS

Exchange Control Notification. The Participant understands that the Options are subject to compliance with the exchange control requirements of the Reserve Bank of India. The Participant understands that he or she must repatriate and convert into local currency the proceeds from the sale of Shares acquired under the Plan within ninety (90) days of receipt and any proceeds from dividends paid on Shares held within one-hundred eighty (180) days of receipt, or within other such period of time as may be required under applicable regulations. The Participant will receive a foreign inward remittance certificate ("FIRC") from the bank where the foreign currency is deposited. The Participant should retain the FIRC as evidence of the repatriation of funds in the event that the Reserve Bank of India, the Employer or the Company requests proof of repatriation. The Participant should consult with his or her personal legal advisor to ensure compliance with the applicable requirements.

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets (including Shares held outside India) in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Exercise of Options. The following supplements Section 3(b) of the Award Agreement:

Due to regulatory requirements in Indonesia, the Participant will be required to exercise the Option using the cashless sell-all exercise method pursuant to which all Shares subject to the exercised Option will be sold immediately upon exercise and the proceeds of sale, less any Tax-Related Items broker's fees or commissions, will be remitted to the Participant in accordance with any applicable exchange control laws and regulations. The Participant acknowledges that the Company's designated broker is under no obligation to arrange for the sale of the Shares pursuant to the cashless sell-all exercise method at any particular price. The Company reserves the right to provide additional methods of exercise depending on the development of local law.

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (*i.e.*, the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

NOTIFICATIONS

Exchange Control Notification. Foreign exchange activity is subject to certain reporting requirements. For foreign currency transactions exceeding US$25,000, the underlying document of that transaction will have to be submitted to the relevant local bank. In addition, if proceeds from the sale of Shares or dividends are repatriated to Indonesia, the Indonesian bank handling the transaction is responsible for submitting a report to Bank Indonesia. The Participant should be prepared to provide information, data and/or supporting documents upon request from the bank for purposes of preparing the report.

Foreign Asset/Account Reporting Notification. The Participant has the obligation to report his or her worldwide assets (including foreign accounts and Shares acquired under the Plan) in his or her annual individual income tax return. In addition, if there is a change of position of any foreign asset the Participant holds (including Shares acquired under the Plan), the Participant must report this change in position (e.g., the sale of Shares) to Bank of Indonesia. The report should be submitted online through Bank Indonesia's website no later than the 15th day of the month following the month in which the activity occurred.

JAPAN

NOTIFICATIONS

Exchange Control Notification. If the Participant acquires Shares valued at more than ¥100 million in a single transaction, the Participant must file a Securities Acquisition Report with the Ministry of Finance (the "MOF") through the Bank of Japan within 20 days of the acquisition.

In addition, if the Participant pays more than ¥30 million in a single transaction for the purchase of Shares when the Participant exercises the Options, the Participant must file a Payment Report with the MOF through the Bank of Japan within 20 days of the date that the payment is made. The precise reporting requirements vary depending on whether or not the relevant payment is made through a bank in Japan. Please note that a Payment Report is required independently from a Securities Acquisition Report. Therefore, the Participant must file both a Payment Report and a Securities Acquisition Report if the total amount that the Participant pays in a single transaction for exercising the Options and purchasing Shares exceeds ¥100 million.

Foreign Asset/Account Reporting Notification. The Participant is required to report details of any assets held outside Japan as of December 31, including Shares, to the extent such assets have a total net fair market value exceeding ¥50,000,000. Such report will be due from the Participant by March 15 each year. The Participant is responsible for complying with this reporting obligation and should confer with his or her personal tax advisor as to whether the Participant will be required to report the details of Options or Shares he or she holds.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy Consent. The following provision replaces the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in this Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan.	***Peserta dengan ini secara jelas, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan mana-mana Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Peserta dalam Pelan tersebut.***
The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, the fact and conditions of the Participant's participation in the Plan, details of all options or any other entitlement to shares of stock awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.	***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Majikan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya , alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau, pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa syer dalam saham atau jawatan pengarah yang dipegang dalam Syarikat, fakta dan syarat-syarat penyertaan Peserta dalam Pelan, butir-butir semua opsyen atau apa-apa hak lain untuk syer dalam saham yang dianugerahkan, dibatalkan, dilaksanakan, terletak hak, tidak diletak hak ataupun bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.***
The Participant also authorizes any transfer of Data, as may be required, to such stock plan service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan and/or with whom any Shares acquired upon exercise of the Options are deposited. The Participant acknowledges that these recipients may be located in the Participant's country or elsewhere, and that the recipient's country (e.g., the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative. The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with	***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan pelan saham sebagaimana yang dipilih oleh Syarikat dari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelandan/atau dengan sesiapa yang mendepositkan Saham yang diperolehi melalui pelaksanaan Opsyen ini. Peserta mengakui bahawa penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negaraPeserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa***

implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan. The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future options or other equity awards to the Participant or administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, Participant understands that he or she may contact his or her local human resources representative.***	***depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia di lokasi masing-masing, di mana butir-butir hubungannya adalah:*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Selanjutnya, Peserta memahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , status sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan opsyen pada masa depan atau anugerah ekuiti lain kepada Peserta atau mentadbir atau mengekalkan anugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan, Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya.***

NOTIFICATIONS

Director Notification Obligation. If the Participant is a director of an Affiliate, the Participant is subject to certain notification requirements under the Malaysian Companies Act, 2016. Among these requirements is an obligation on the Participant's part to notify the Malaysian Affiliate in writing when the Participant acquires an interest (e.g., Options or Shares) in the Company or any related companies. In addition, the Participant must notify the Malaysian Affiliate when the Participant sells Shares (including Shares acquired from exercise of Options under the Plan) or the shares of any related company. These notifications must be made within 14 days of acquiring or disposing of any interest in the Company or any related company.

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Options, the Participant acknowledges that he or she understands and agrees that: (a) the Options are not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan or the acquisition of Shares does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Options, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 9 of the Award Agreement, in which the following is clearly described and established: (a) participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; (c) participation in the Plan is voluntary; and (d) the Company and its Affiliates are not responsible for any decrease in the value of the Shares underlying the Options.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar las Opciones, el Beneficiario reconoce y acepta que: (a) las Opciones no se encuentran relacionadas con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Beneficiario.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Beneficiario.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Beneficiario y la Compañía, ya que el Beneficiario participa únicamente en de forma comercial y que su único Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Beneficiario y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar las Opciones, el Beneficiario reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Beneficiario reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 9 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación

en el Plan es voluntaria; y (d) que la Compañía, así como sus Afiliadas, no son responsables por cualquier detrimento en el valor de las acciones que integran las Opciones.

Finalmente, el Beneficiario acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y a sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Option, the Participant acknowledges that: (i) the Option is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the Option is not intended to replace any pension rights or compensation.

PHILIPPINES

NOTIFICATIONS

Securities Law Information. This offering is subject to exemption from the requirements of securities registration with the Philippines Securities and Exchange Commission, under Section 10.1 (k) of the Philippine Securities Regulation Code. Section 10.1(k) of the Philippine Securities Regulation Code provides as follows:

"Section 10.1 Exempt Transactions – The requirement of registration under Subsection 8.1 shall not apply to the sale of any security in any of the following section;

[. . .]

(k) The sale of securities by an issuer to fewer than twenty (20) persons in the Philippines during any twelve-month period."

THE SECURITIES BEING OFFERED OR SOLD HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FURTHER OFFER OR SALE THEREOF IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

The Participant acknowledges he or she is permitted to dispose or sell Shares acquired under the Plan provided the offer and resale of the Shares takes place outside the Philippines through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the NASDAQ Global Select Market in the United States of America.

SINGAPORE

NOTIFICATIONS

Securities Law Notification. The Options are being granted to the Participant pursuant to the "Qualifying Person" exemption under section 273(1)(f) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore. The Participant should note that such Option grant is subject to section 257 of the SFA and the Participant will not be able to make any subsequent sale in Singapore, or any offer of such subsequent sale of the Shares underlying the Option unless such sale or offer in Singapore is made (i) more than six months from the Grant Date, (ii) pursuant to

the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the SFA, or (iii) pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Singapore, and Shares acquired under the Plan may be sold through this exchange.

Director Notification Requirement. If the Participant is a director, associate director or shadow director of a Singaporean Affiliate, the Participant is subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Singapore Affiliate in writing of an interest (*e.g.*, Options, Shares, etc.) in the Company or any Affiliate within two business days of (i) its acquisition or disposal, (ii) any change in previously disclosed interest (*e.g.*, when Shares acquired at vesting are sold), or (iii) becoming a director, associate director or shadow director.

TURKEY

NOTIFICATIONS

Securities Law Notification. Under Turkish law, the Participant is not permitted to sell any Shares acquired under the Plan in Turkey. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Turkey, under the ticker symbol "FSLR" and the Shares may be sold through this exchange.

Exchange Control Notification. Turkish residents are permitted to purchase and sell securities or derivatives traded on exchanges abroad only through a financial intermediary licensed in Turkey. Therefore, the Participant may be required to appoint a Turkish broker to assist the Participant with the exercise of the Options and the sale of the Shares acquired under the Plan. The Participant should consult his or her personal legal advisor before exercising the Options and/or selling any Shares acquired under the Plan to confirm the applicability of this requirement to the Participant.

UNITED ARAB EMIRATES ("UAE")

NOTIFICATIONS

Securities Law Notification. The Options are available only for select employees of the Company and its Affiliates and is in the nature of providing employee incentives in the UAE. This Award Agreement, the Addendum, the Plan and other incidental communication materials are intended for distribution only to eligible employees for the purposes of an employee compensation or reward scheme, and must not be delivered to, or relied on, by any other person.

The Dubai Creative Clusters Authority, Emirates Securities and Commodities Authority and/or the Central Bank of the United Arab Emirates have no responsibility for reviewing or verifying any documents in connection with the Options or this Award Agreement. Further, neither the Ministry of Economy nor the Dubai Department of Economic Development have approved this Award Agreement nor taken steps to verify the information set out in it, and have no responsibility for it.

The securities to which this Award Agreement relates may be illiquid and/or subject to restrictions on their resale. Individuals should conduct their own due diligence on the securities.

Residents of the UAE who do not understand or have questions regarding this Award Agreement, the Addendum or the Plan should consult an authorized financial adviser.

EXHIBIT 10.51

Form Share Award-011

SHARE AWARD AGREEMENT under the FIRST SOLAR, INC. 2020 OMNIBUS INCENTIVE COMPENSATION PLAN, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form Share Award-011 by reference.

This Share Award Agreement including any addendum hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of an award of fully vested shares of the Company's common stock (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the Company's 2020 Omnibus Incentive Compensation Plan (the "Plan") for the number of shares of common stock (the "Shares") set forth in the Grant Notice. The Participant shall be fully vested in this Award as of the Grant Date set forth in the Grant Notice. This Award is subject to all the terms and conditions of this Award Agreement and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 10 OF THIS AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions.** The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 14	"Grant Date"	Paragraph 2
"Award"	Paragraph 2	"Participant"	Paragraph 1
"Award Agreement"	Paragraph 2	"Plan"	Paragraph 2
"Business Day"	Section 11	"Share"	Paragraph 2
"Company"	Paragraph 1	"Tax-Related Items"	Section 3
"Employer"	Section 3		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan.

SECTION 3. **Responsibility for Taxes.**

(a) Regardless of any action the Company or the Participant's employer, if other than the Company (the "Employer"), takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (i) make no representations or undertakings regarding the treatment of any Tax-

Related Items in connection with any aspect of the Award, including, without limitation, the issuance of Shares, the subsequent sale of Shares acquired pursuant to such issuance and the receipt of any dividends; and (ii) do not commit to and are under no obligation to structure the terms of the Award or any aspect of the Award to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company or its agent to satisfy any applicable withholding obligations with regards to Tax-Related Items by withholding a number of Shares to be issued upon settlement of the Award. If, for any reason, the Shares that would otherwise be deliverable to the Participant upon settlement of the Award would be insufficient to satisfy the tax withholding obligations, or if such withholding in Shares is problematic under applicable tax or securities law or if there is a substantial likelihood that the use of such form of payment would result in adverse treatment for the Company, the Participant authorizes (i) the Company and any brokerage firm determined acceptable to the Company to sell on the Participant's behalf a whole number of Shares from those Shares to be issued to the Participant as the Company determines to be appropriate to generate cash proceeds sufficient to satisfy any applicable withholding obligations for Tax-Related Items, (ii) the Company, the Employer and any Affiliate to withhold an amount from the Participant's wages or other compensation or require the Participant to make a cash payment sufficient to fully satisfy any applicable withholding obligations for Tax-Related Items and (iii) the Company, the Employer and any Affiliate to satisfy any applicable withholding obligations for the Tax-Related Items by any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee.

(c) Depending on the withholding method, the Company may withhold or account for Tax-Related Items by considering statutory or other applicable withholding rates, including minimum or maximum rates, in the jurisdictions applicable to the Participant. In no event will the Company withhold less than the minimum or more than the maximum amount necessary to satisfy the withholding requirements in the applicable jurisdiction. In the event of over-withholding, the Participant may receive a refund of any over-withheld amount in cash (with no entitlement to the equivalent in Shares), or if not refunded, the Participant may seek a refund from the local tax authorities. If the obligation for Tax-Related Items is satisfied by withholding in Shares, the Participant will be deemed, for tax and/or social security contributions and other purposes, to have been issued the full number of Shares, notwithstanding that a number of Shares are held back solely for the purposes of paying the Tax-Related Items due as a result of any aspect of the Participant's participation in the Plan.

(d) The Participant shall pay to the Company or the Employer any amount of Tax-Related Items that the Company or the Employer may be required to withhold or account for as a result of the Participant's participation in the Plan that cannot be satisfied by the means previously described. The Participant expressly acknowledges that the delivery of Shares is conditioned on satisfaction of all Tax-Related Items in accordance with this Section 3, and that the Company may refuse to deliver the Shares if the Participant fails to comply with the Participant's obligations in connection with the Tax-Related Items.

SECTION 4. Consents and Legends.

(a) Consents. The Participant's rights in respect of the Shares are conditioned on the receipt to the full satisfaction of the Committee of any required consents that the Committee may determine to be necessary or advisable (including, without limitation, the Participant's consent to the Company's supplying to any third-party recordkeeper of the Plan such personal information as the Committee deems advisable to administer the Plan, as

may further be described to the extent applicable discussing applicable data privacy considerations in an addendum to this Award Agreement, as described in Section 14).

(b) Legends. The Company may affix to certificates for Shares issued pursuant to this Award Agreement any legend that the Committee determines to be necessary or advisable (including to reflect any restrictions to which the Participant may be subject under any applicable securities laws). The Company may advise the applicable transfer agent to place a stop order against any legended Shares.

SECTION 5. Nature of Award. As a condition to receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards, or benefits in lieu of awards, even if Shares have been granted repeatedly in the past;

(c) all decisions with respect to future share or other awards, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the Shares, and the income from and value of same, are not intended to replace any pension rights or compensation;

(g) the Shares, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, without limitation, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, bonuses, long-service awards, holiday pay, pension or retirement or welfare benefits or similar payments and in no event should be considered as compensation for, or relating in any way to, past services for the Company, the Employer, or any Affiliate (as defined in the Plan);

(h) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment agreement or relationship with the Company or any Affiliate;

(i) the future value of the underlying Shares is unknown and cannot be predicted with certainty;

(j) unless otherwise agreed with the Company, the Shares, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate; and

(k) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant for the subsequent sale of the Share.

SECTION 6. No Advice Regarding Grant. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan, or the Participant's acquisition or sale of the underlying Shares. The Participant understands and agrees that the Participant should consult with the Participant's own personal tax,

legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 7. Electronic Delivery. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 8. Successors and Assigns of the Company. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 9. Committee Discretion. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 10. Dispute Resolution.

(a) Jurisdiction and Venue. Notwithstanding any provision in any employment agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its equivalent in the Participant's country of residence) to the applicable address set forth in Section 11 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 10(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in the Participant's employment agreement, if any, between the Participant and the Company, the Participant and the Company hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 10, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 11. **Notice.** All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 12. **Governing Law.** This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 13. **Headings.** Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 14. **Country-Specific or Other Addenda.**

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate the administration of the Plan; provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award

(c) Any Addendum attached hereto shall be considered a part of this Award Agreement.

SECTION 15. **Severability.** The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 16. **Amendment of this Award Agreement.** The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not, to the extent of such impairment, be effective without the Participant's consent (it being understood, notwithstanding the foregoing proviso, that this Award Agreement shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 17. Imposition of Other Requirements. The Company reserves the right to impose other requirements on the Participant's participation in the Plan, and on any Shares acquired under this Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 18. Award Conditioned On Acceptance of Terms and Conditions. The delivery of the Shares is conditioned on Participant's acceptance of the terms and conditions of this Award as set forth herein. If the Award is accepted electronically or otherwise, such acceptance shall include Participant's confirmation that he/she has read and understood the documents relating to this Award (i.e., the Plan, this Award Agreement, including any Addendum) and accepts the terms of those documents accordingly.

SECTION 19. Counterparts. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 20. Waiver. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 21. Insider Trading Restrictions/Market Abuse Laws. The Participant acknowledges that the Participant may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the Shares are listed and in applicable jurisdictions, including the United States, the Participant's country and the designated broker's country, that may affect his or her ability to accept, acquire, sell or otherwise dispose of Shares, rights to Shares (e.g., the Award) or rights linked to the value of Shares under the Plan during such times as the Participant is considered to have "inside information" regarding the Company (as defined by the laws in the applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Participant placed before the Participant possessed inside information. Furthermore, the Participant could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. The Participant acknowledges that it is his or her responsibility to comply with any applicable restrictions, and the Participant should consult his or her personal advisor on this matter.

SECTION 22. Foreign Asset/Account, Exchange Control and Tax Reporting. The Participant acknowledges that the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of Shares or cash (including dividends and the proceeds arising from the sale of Shares) derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 23. Entire Agreement. This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (SHARE AWARD-011)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Shares and that will apply to the Participant if he or she resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of September 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant is issued or sells any Shares acquired under the Plan.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Consent to Personal Data Processing and Transfer. By accepting the Award via the Company's acceptance procedure, the Participant is declaring that he or she agrees with the data processing practices described herein and consents to the collection, processing and use of Personal Data (as defined below) by the Company and the transfer of Personal Data to the recipients mentioned herein, including recipients located in countries which do not adduce an adequate level of protection from a European (or other) data protection law perspective, for the purposes described herein.

(a) Declaration of Consent. The Participant understands that the Participant must review the following information about the processing of the Participant's personal data by or on behalf of the Company or the Employer as described in this Award Agreement and any materials related to the Award (the "Personal Data") and declare his or her consent. As regards the processing of the Participant's Personal Data in connection with the Plan and this Award Agreement, the Participant understands that the Company is the controller of the Participant's Personal Data.

(b) Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for purposes of allocating Shares and implementing, administering and managing the Plan. The Personal Data processed by the Company includes, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock

or equivalent benefits awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor. The legal basis for the processing of the Participant's Personal Data, where required, is the Participant's consent.

(c) Stock Plan Administration Service Providers. The Participant understands that the Company transfers the Participant's Personal Data, or parts thereof, to (i) Fidelity Stock Plan Services, LLC (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Company's service providers will open an account for the Participant to receive and trade Shares acquired under the Plan and that the Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan.

(d) International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as Fidelity Stock Plan Services, LLC and My Equity Comp, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of the Participant's Personal Data is the Participant's consent.

(e) Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. The Participant understands that any participation in the Plan and his or her consent are purely voluntary. The Participant may deny or later withdraw his or her consent at any time, with future effect and for any or no reason. If the Participant denies or later withdraws his or her consent, the Company can no longer offer participation in the Plan or grant equity awards to the Participant or administer or maintain such awards, and the Participant will no longer be eligible to participate in the Plan. The Participant further understands that denial or withdrawal of his or her consent would not affect his or her status or salary as an employee or his or her career and that the Participant would merely forfeit the opportunities associated with the Plan.

(g) Data Subject Rights. The data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

AUSTRALIA

TERMS AND CONDITIONS

Tax Information. The Plan is a plan to which Subdivision 83A-C of the Income Tax Assessment Act 1997 (Cth) applies (subject to conditions in the Act).

NOTIFICATIONS

Securities Law Notification. If the Participant offers to sell the Shares acquired under the Plan to a person or entity resident in Australia, the offer may be subject to disclosure requirements under Australian law. The Participant should obtain legal advice regarding any applicable disclosure obligations before making any such offer.

Exchange Control Notification. Exchange control reporting is required for cash transactions exceeding A$10,000 and international fund transfers. If there is an Australian bank assisting with the transaction, the Australian bank will file the report for the Participant. If there is no Australian bank involved in the transaction, the Participant must file the report.

BELGIUM

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the Shares on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report securities held (including Shares) or any bank or brokerage accounts opened and maintained outside Belgium on the Participant's annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium the details of such accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

Stock Exchange Tax. A stock exchange tax applies to transactions executed by a Belgian resident through a non-Belgian financial intermediary, such as a U.S. broker. The stock exchange tax may apply when Shares acquired under the Plan are sold. The Participant should consult with his or her personal tax advisor for additional details on his or her obligations with respect to the stock exchange tax.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting the Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the issuance of Shares in settlement of the Award, the subsequent sale of the Shares, and the receipt of any dividends.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that (i) he or she is making an investment decision, (ii) the Award is not part of the terms and conditions of the Participant's employment and (iii) the value of the underlying Shares is not fixed and may increase or decrease in value over the vesting period without compensation to the Participant.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments, including Shares acquired under the Plan; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to the Shares may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Securities Law Notification. The Participant will not be permitted to sell or otherwise dispose of the Shares acquired under the Plan within Canada. The Participant will be permitted to sell or dispose of any Shares only if such sale or disposal takes place outside Canada through the facilities of the stock exchange on which the Shares are traded.

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada and the Shares acquired under the Plan) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). The cost of the Shares generally is the adjusted cost base ("ACB") of the Shares, which typically equals the fair market value of the Shares at the time of acquisition, but if the Participant owns other Shares, the ACB may have to be averaged with the ACB of the other Shares. The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements.

CHILE

NOTIFICATIONS

Securities Law Notification. This Award constitutes a private offering of securities in Chile effective as of the Grant Date. This offer is made subject to general ruling n° 336 of the Chilean Commission for the Financial Market ("CMF"). The offer refers to securities not registered at the securities registry or at the foreign securities registry of the CMF, and, therefore, such securities are not subject to oversight of the CMF. Given that the securities underlying this Award are not registered in Chile, the Company is not required to provide public information about the Award or the Shares in Chile. Unless the Award and/or the Shares are registered with the CMF, a public offering of such securities cannot be made in Chile.

El Beneficioconstituye una oferta privada de valores en Chile y se inicia en la Fecha de la Oferta. Esta oferta se acoge a las disposiciones de la Norma de Carácter General Nº 336 ("NCG 336") de la Comisión para el Mercado Financiero de Chile ("CMF"). Esta oferta versa sobre valores no inscritos en el Registro de Valores o en el Registro de Valores Extranjeros que lleva la CMF, por lo que tales valores no están sujetos a la fiscalización de ésta. Por tratarse de valores no inscritos en Chile no existe la obligación por parte de la Compañía de entregar en Chile información pública respecto de los mismos. Estos valores no podrán ser objeto de oferta pública en Chile mientras no sean inscritos en el Registro de Valores correspondiente.

Exchange Control Notification. The Participant is not required to repatriate funds obtained from the sale of Shares or the receipt of any dividends. However, if the Participant decides to repatriate such funds, the Participant must do so through the Formal Exchange Market ("*Mercado Cambiario Formal*") if the amount of the funds exceeds US$10,000. In such case, the Participant must report the payment to a commercial bank or registered foreign exchange office receiving the funds.

If the Participant's aggregate investments held outside Chile meets or exceeds US$5,000,000 (including the investments made under the Plan), the Participant must inform the Central Bank ("*Banco Central de Chile*") with updated information accumulated for a three-month period within and no later than the first 45 calendar days following the closing of the months of March, June and September and no later than 60 calendar days following the closing of the month of December. Annex 3.1 of Chapter XII of the Foreign Exchange Regulations must be used to file this report.

Please note that exchange control regulations in Chile are subject to change. The Participant should consult with his or her personal legal advisor regarding any exchange control obligations that the Participant may have.

Annual Tax Reporting Obligation. The Chilean Internal Revenue Service ("CIRS") requires Chilean residents to report the details of their foreign investments on an annual basis. Foreign investments include Shares acquired under

the Plan. Further, if the Participant wishes to receive a credit against his or her Chilean income taxes for any taxes paid abroad, the Participant must also report the payment of taxes abroad to the CIRS. These reports must be submitted electronically through the CIRS website at www.sii.cl in accordance with applicable deadlines. In addition, Shares acquired under the Plan must be registered with the CIRS's Foreign Investment Registry. The Participant should consult with his or her personal legal and tax advisors to ensure compliance with applicable requirements.

FRANCE

TERMS AND CONDITIONS

Award Not Tax-Qualified. The Participant understands that the Award is not intended to be French tax-qualified pursuant to Section L. 225-197 1 to L. 225-197 6 of the French Commercial Code, as amended.

Language Consent. By accepting the Award, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. Participant accepts the terms of those documents accordingly.

En acceptant ces <<Award>>, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities (e.g., the Shares) or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in connection with the sale of securities or any dividends received in relation to Shares in excess of €12,500 must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

HONDURAS

There are no country-specific provisions.

INDIA

NOTIFICATIONS

Exchange Control Notification. The Participant understands that the Shares are subject to compliance with the exchange control requirements of the Reserve Bank of India. The Participant understands that he or she must repatriate and convert into local currency the proceeds from the sale of Shares acquired under the Plan within ninety

(90) days of receipt and any proceeds from dividends paid on Shares held within one-hundred eighty (180) days of receipt, or within other such period of time as may be required under applicable regulations. The Participant will receive a foreign inward remittance certificate ("FIRC") from the bank where the Participant deposits the foreign currency. The Participant should maintain the FIRC as evidence of the repatriation of funds in the event the Reserve Bank of India or the Employer requests proof of repatriation. The Participant should consult with his or her personal legal advisor to ensure compliance with the applicable requirements.

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets (including Shares held outside India) in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (*i.e.*, the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

NOTIFICATIONS

Exchange Control Notification. Foreign exchange activity is subject to certain reporting requirements. For foreign currency transactions exceeding US$25,000, the underlying document of that transaction will have to be submitted to the relevant local bank. In addition, if proceeds from the sale of Shares or dividends are repatriated to Indonesia, the Indonesian bank handling the transaction is responsible for submitting a report to Bank Indonesia. The Participant should be prepared to provide information, data and/or supporting documents upon request from the bank for purposes of preparing the report.

Foreign Asset/Account Reporting Notification. The Participant has the obligation to report his or her worldwide assets (including foreign accounts and Shares acquired under the Plan) in his or her annual individual income tax return. In addition, if there is a change of position of any foreign asset the Participant holds (including Shares acquired under the Plan), the Participant must report this change in position (e.g., the sale of Shares) to Bank of Indonesia. The report should be submitted online through Bank Indonesia's website no later than the 15th day of the month following the month in which the activity occurred.

JAPAN

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. The Participant is required to report details of any assets held outside Japan as of December 31, including Shares, to the extent such assets have a total net fair market value exceeding ¥50,000,000. Such report will be due from the Participant by March 15 each year. The Participant is responsible for

complying with this reporting obligation and should consult with his or her personal tax advisor as to whether the Participant will be required to report the details of Shares he or she holds.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy Consent. The following provision replaces the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in the Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan.	***Peserta dengan ini secara jelas, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan mana-mana Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Peserta dalam Pelan tersebut.***
The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, the fact and conditions of the Participant's participation in the Plan, details of all entitlement to shares of stock awarded, cancelled, exercised, vested, unvested or outstanding in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.	***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Majikan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya , alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa syer dalam saham atau jawatan pengarah yang dipegang dalam Syarikat, fakta dan syarat-syarat penyertaan Peserta dalam Pelan, butir-butir semua opsyenatau apa-apa hak lain untuk syer dalam saham yang dianugerahkan, dibatalkan, dilaksanakan, terletak hak, tidak diletak hak ataupun bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.***
The Participant also authorizes any transfer of Data, as may be required, to such stock plan service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan and/or with whom any Shares acquired under the Plan are deposited. The Participant acknowledges that these recipients may be located in the Participant's country or	***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan pelan saham sebagaimana yang dipilih oleh Syarikat dari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelandan/atau dengan sesiapa yang mendepositkan Saham yang diperolehi melalui pelaksanaan Opsyen ini. Peserta mengakui bahawa***

elsewhere, and that the recipient's country (*e.g.*, the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative. The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan. The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Industri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Company and the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future equity awards to the Participant or administer or maintain such awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.***	***penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negaraPeserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia di lokasi masing-masing, di mana butir-butir hubungannya adalah:*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia*** ***Selanjutnya, Peserta memahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , status sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan opsyen pada masa depan atau anugerah ekuiti lain kepada Peserta atau mentadbir atau mengekalkan anugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan,Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya.***

NOTIFICATIONS

Director Notification Obligation. If the Participant is a director of an Affiliate, the Participant is subject to certain notification requirements under the Malaysian Companies Act, 2016. Among these requirements is an obligation on the Participant's part to notify the Malaysian Affiliate in writing when the Participant acquires an interest (e.g., Shares) in the Company or any related companies. In addition, the Participant must notify the Malaysian Affiliate when the Participant sells Shares (including Shares acquired under the Plan) or the shares of any related company. These notifications must be made within 14 days of acquiring or disposing of any interest in the Company or any related company.

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that he or she understands and agrees that: (a) the Award is not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan or the acquisition of Shares does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Award, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 5 of the Award Agreement, in which the following is clearly described and established: (a) participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; (c) participation in the Plan is voluntary; and (d) the Company and its Affiliates are not responsible for any decrease in the value of the Shares underlying the Award.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar el Beneficio, el Beneficiario reconoce y acepta que: (a) el Beneficio no se encuentra relacionado con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Beneficiario.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Beneficiario.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America, es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Beneficiario y la Compañía, ya que el Beneficiario participa únicamente en de forma comercial y que su único patrón lo es Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Beneficiario y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar el Beneficio, el Beneficiario reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Beneficiario reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 5 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación en el Plan es voluntaria; y (d) que la Compañía, así como sus Afiliadas no son responsables por cualquier detrimento en el valor de las acciones que integran el Beneficio.

Finalmente, el Beneficiario acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that: (i) the Award is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the Award is not intended to replace any pension rights or compensation.

PHILIPPINES

NOTIFICATIONS

Securities Law Information. This offering is subject to exemption from the requirements of securities registration with the Philippines Securities and Exchange Commission, under Section 10.1 (k) of the Philippine Securities Regulation Code. Section 10.1(k) of the Philippine Securities Regulation Code provides as follows:

"Section 10.1 Exempt Transactions – The requirement of registration under Subsection 8.1 shall not apply to the sale of any security in any of the following section;

[. . .]

"(k) The sale of securities by an issuer to fewer than twenty (20) persons in the Philippines during any twelve-month period."

THE SECURITIES BEING OFFERED OR SOLD HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FURTHER OFFER OR SALE THEREOF IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

The Participant acknowledges he or she is permitted to dispose or sell Shares acquired under the Plan provided the offer and resale of the Shares takes place outside the Philippines through the facilities of a stock exchange on which the Shares are listed. The Shares are currently listed on the NASDAQ Global Select Market in the United States of America.

SINGAPORE

NOTIFICATIONS

Securities Law Notification. The Award being granted to the Participant pursuant to the "Qualifying Person" exemption under section 273(1)(f) of the Singapore Securities and Futures Act (Chapter 289, 2006 Ed.) ("SFA"). The Plan has not been lodged or registered as a prospectus with the Monetary Authority of Singapore. The Participant should note that the Award is subject to section 257 of the SFA and the Participant will not be able to make any subsequent sale in Singapore, or any offer of such subsequent sale of the Shares underlying the Award, unless such sale or offer in Singapore is made (i) more than six months from the Grant Date, (ii) pursuant to the exemptions under Part XIII Division (1) Subdivision (4) (other than section 280) of the SFA, or (iii) pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Singapore, and Shares acquired under the Plan may be sold through this exchange.

NOTIFICATIONS

Director Notification Requirement. If the Participant is a director, associate director or shadow director of a Singaporean Affiliate, the Participant is subject to certain notification requirements under the Singapore Companies Act. Among these requirements is an obligation to notify the Singapore Affiliate in writing of an interest (*e.g.*, the Award) in the Company or any Affiliate within two (2) business days of (i) its acquisition or disposal, (ii) any change in previously disclosed interest (*e.g.*, when Shares are sold), or (iii) becoming a director, associate director or shadow director.

THAILAND

NOTIFICATIONS

Exchange Control Notification. Thai resident Participants realizing US$1,000,000 or more in a single transaction from the sale of Shares must repatriate the proceeds to Thailand and then convert such proceeds to Thai Baht within 360 days of repatriation or deposit the proceeds into a foreign currency account opened with any commercial bank in Thailand. The Participant must provide details of the transaction (*i.e.*, identification information and purpose of the transaction) to the receiving bank. If the Participant fails to comply with these obligations, the Participant may be subject to penalties assessed by the Bank of Thailand. The Participant should consult his or her personal advisor before taking action with respect to the remittance of proceeds from the sale of Shares into Thailand. The Participant is responsible for ensuring compliance with all exchange control laws in Thailand.

TURKEY

NOTIFICATIONS

Securities Law Notification. Under Turkish law, the Participant is not permitted to sell any Shares acquired under the Plan in Turkey. The Shares are currently traded on the NASDAQ Global Select Market, which is located outside Turkey, under the ticker symbol "FSLR" and the Shares may be sold through this exchange.

Exchange Control Notification. Turkish residents are permitted to purchase and sell securities or derivatives traded on exchanges abroad only through a financial intermediary licensed in Turkey. Therefore, the Participant may be required to appoint a Turkish broker to assist the Participant with the sale of the Shares acquired under the Plan. The Participant should consult his or her personal legal advisor before selling any Shares acquired under the Plan to confirm the applicability of this requirement to the Participant.

UNITED ARAB EMIRATES ("UAE")

NOTIFICATIONS

Securities Law Notification. The Shares are available only for select employees of the Company and its Affiliates and is in the nature of providing employee incentives in the UAE. This Award Agreement, the Addendum, the Plan and other incidental communication materials are intended for distribution only to eligible employees for the purposes of an employee compensation or reward scheme, and must not be delivered to, or relied on, by any other person.

The Dubai Creative Clusters Authority, Emirates Securities and Commodities Authority and/or the Central Bank of the United Arab Emirates has no responsibility for reviewing or verifying any documents in connection with the Shares or this Award Agreement. Further, neither the Ministry of Economy nor the Dubai Department of Economic Development have approved this Award Agreement nor taken steps to verify the information set out in it, and have no responsibility for it.

The securities to which this Award Agreement relates may be illiquid and/or subject to restrictions on their resale. Individuals should conduct their own due diligence on the securities.

Residents of the UAE who do not understand or have questions regarding this Award Agreement, the Addendum or the Plan should consult an authorized financial adviser.

EXHIBIT 10.52

Form Cash-009

CASH INCENTIVE Award Agreement under the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan, between First Solar, Inc. (the "Company"), a Delaware corporation, and the individual (the "Participant") set forth on the Grant Notice which incorporates this Form Cash-009 by reference.

This Cash Incentive Award Agreement including any addendum hereto and the Grant Notice (collectively, this "Award Agreement") set forth the terms and conditions of this Cash Incentive Award (this "Award") that is being granted to the Participant set forth on the Grant Notice on the date set forth in the Grant Notice (such date, the "Grant Date"), under the terms of the First Solar, Inc. 2020 Omnibus Incentive Compensation Plan (the "Plan") for the amount set forth in the Grant Notice. The Award is subject to the all terms and conditions of this Award Agreement and the Plan, including without limitation, THE DISPUTE RESOLUTION PROVISIONS SET FORTH IN SECTION 12 OF THIS CASH INCENTIVE AWARD AGREEMENT.

* * *

SECTION 1. **The Plan**. This Award is made pursuant to the Plan, all the terms of which are hereby incorporated in this Award Agreement. In the event of any conflict between the terms of the Plan, on the one hand, and the terms of this Award Agreement, on the other hand, the terms of the Plan shall govern.

SECTION 2. **Definitions**. The following terms are defined in this Award Agreement, and shall when capitalized have the meaning ascribed to them in this Award Agreement in the locations set forth below.

Defined Term	Cross-Ref.	Defined Term	Cross-Ref.
"Addendum"	Section 16	"Grant Date"	Paragraph 2
"Award"	Paragraph 2	"Participant"	Paragraph 1
"Award Agreement"	Paragraph 2	"Plan"	Paragraph 2
"Business Day"	Section 13	"Tax-Related Items"	Section 6
"Company"	Paragraph 1	"Vesting Date"	Section 3(a)
"Employer"	Section 3(b)		

Capitalized terms that are not defined in this Award Agreement shall have the meanings used or defined in the Plan.

SECTION 3. **Vesting and Payment**.

(a) Vesting. Except as otherwise determined by the Committee in its sole discretion, the Participant shall vest in accordance with the vesting date(s) set forth in the Grant Notice (each a "Vesting Date"); provided that the Participant is actively employed by the Company or an Affiliate on the relevant Vesting Date.

(b) Payment. The portion of the Award that vests on the relevant Vesting Date will be paid to the Participant in cash, less Tax-Related Items, as defined in Section 6, as soon as administratively practicable following the applicable Vesting Date, and in no event later than March 15th of the calendar year following the calendar year in which the Vesting Date occurs. No interest will be paid on the Award and the amounts will not be adjusted for

inflation. The Award is denominated in U.S. dollars, but the Company shall pay, or shall cause Participant's employer (the "Employer") to pay, all amounts distributable under the Award in local currency through local payroll. Any amount that may become payable hereunder will be converted from U.S. dollars into local currency on the applicable Vesting Date at the exchange rate reported on the applicable Vesting Date in the Wall Street Journal (or such other reliable source as may be selected from time to time by the Company in its discretion).

SECTION 4. **Forfeiture**. Unless the Committee determines otherwise, if the Participant's rights with respect to the Award pursuant to this Award Agreement do not vest prior to the date on which the Participant's employment or service relationship with the Company and/or its Affiliates terminates for any reason, the Participant's rights with respect to such Award shall immediately terminate, and the Participant will not be entitled to receive any payments with respect thereto (as further described in Section 7(i) below).

SECTION 5. **Non-Transferability**. Unless otherwise provided by the Committee in its discretion, the Award may not be sold, assigned, alienated, transferred, pledged, attached or otherwise encumbered. Any purported sale, assignment, alienation, transfer, pledge, attachment or other encumbrance of an Award in violation of the provisions of this Section 5 shall be void.

SECTION 6. **Responsibility for Taxes**.

(a) Regardless of any action the Company or the Employer, takes with respect to any or all federal, state or local income tax, social security contributions, payroll tax, payment on account or other tax-related items related to the Participant's participation in the Plan that are legally applicable to the Participant ("Tax-Related Items"), the Participant acknowledges that the ultimate liability for all Tax-Related Items is and remains the Participant's responsibility and that such liability may exceed the amount actually withheld, if any, by the Company or the Employer. The Participant further acknowledges that the Company and/or the Employer (1) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Award, including, without limitation, the grant, vesting or payment of the Award; and (2) do not commit to and are under no obligation to structure the terms of the Award to reduce or eliminate the Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if the Participant becomes subject to tax and/or social security contributions in more than one jurisdiction, the Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction.

(b) Prior to any relevant taxable, tax and/or social security contribution withholding event, the Participant shall pay or make adequate arrangements satisfactory to the Company and/or the Employer to satisfy all Tax-Related Items. In this regard, the Participant authorizes the Company and/or the Employer, at their discretion, to satisfy any applicable withholding obligations with regard to all Tax-Related Items by (i) withholding from the amount of the cash payment made pursuant to the Award, the Participant's wages or other compensation payable to Participant by the Company and/or the Employer or (ii) any other method of withholding determined by the Company and, to the extent required by applicable law or the Plan, approved by the Committee. The Company may withhold or account for Tax-Related Items by considering statutory or other applicable withholding rates, including minimum or maximum rates in the jurisdictions applicable to the Participant. In no event will the Company withhold less than the minimum or more than the maximum amount necessary to satisfy the withholding requirements in the applicable jurisdiction. In the event of over-withholding, the Participant may receive a refund of any over-withheld amount in cash, or if not refunded, the Participant may seek a refund from the local tax authorities.

SECTION 7. **Nature of Award**. As a condition to receipt of this Award, the Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, is discretionary in nature and may be modified, amended, suspended or terminated by the Company at any time, unless otherwise provided in the Plan;

(b) this Award is exceptional, voluntary and occasional and does not create any contractual or other right to receive future awards of cash, or benefits in lieu of cash awards, even if cash awards have been granted in the past;

(c) all decisions with respect to future cash incentive or other awards, if any, will be at the sole discretion of the Company;

(d) the Participant's participation in the Plan shall not create a right to further employment with the Employer and shall not interfere with the ability of the Employer to terminate the Participant's employment relationship at any time;

(e) the Participant's participation in the Plan is voluntary;

(f) the Award is not intended to replace any pension rights or compensation;

(g) this Award and the Participant's participation in the Plan will not be interpreted to form or amend an employment or service agreement or relationship with the Company or any Affiliate;

(h) no claim or entitlement to compensation or damages shall arise from forfeiture of the Award resulting from termination of the Participant's employment or other service relationship by the Company or the Employer (for any reason whatsoever, whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment agreement, if any);

(i) except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment or service relationship, the Participant's right to vest in the Award under the Plan, if any, will terminate effective as of the date the Participant is no longer actively providing services to the Company, the Employer or any Affiliate of the Company (regardless of the reason for such termination and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), and unless otherwise expressly provided in this Award Agreement or determined by the Company, the Participant's right to vest in the Award under the Plan, if any, will terminate as of such date and will not be extended by any notice period (*e.g.*, the Participant's period of service would not include any contractual notice period or any period of "garden leave" or similar period mandated under employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any); the Committee shall have the exclusive discretion to determine when the Participant is no longer actively providing services for purposes of the Award (including whether the Participant may still be considered to be providing services while on a leave of absence);

(j) unless otherwise agreed with the Company, the Award is not granted as consideration for, or in connection with, the service Participant may provide as a director of an Affiliate;

(k) unless otherwise agreed to by the Company, the Award and the benefits under the Plan, if any, will not automatically transfer to a successor company in the case of a Change of Control or a merger, takeover, or transfer of liability of the Employer; and

(l) neither the Company nor the Employer or any Affiliate shall be liable for any foreign exchange rate fluctuation between the Participant's local currency and the United States Dollar that may affect the value of the Award or of any amounts due to the Participant.

SECTION 8. **No Advice Regarding Grant**. Nothing in this Award Agreement should be viewed as the provision by the Company of any tax, legal, or financial advice, nor is the Company making any recommendations regarding the Participant's participation in the Plan. The Participant understands and agrees that the Participant

should consult with the Participant's own personal tax, legal and financial advisors regarding the Participant's participation in the Plan before taking any action in relation thereto.

SECTION 9. **Electronic Delivery**. The Company may, in its sole discretion, decide to deliver any documents related to current or future participation in the Plan by electronic means. Receipt of this Award is conditioned upon the Participant's consent to such electronic delivery and the Participant's agreement to participate in the Plan through an online or electronic system established and maintained by the Company or a third party designated by the Company.

SECTION 10. **Successors and Assigns of the Company**. The terms and conditions of this Award Agreement shall be binding upon and shall inure to the benefit of the Company and its successors and assigns.

SECTION 11. **Committee Discretion**. The Committee shall have full and plenary discretion with respect to any actions to be taken or determinations to be made in connection with this Award Agreement, and its determinations shall be final, binding and conclusive.

SECTION 12. **Dispute Resolution**.

(a) Jurisdiction and Venue. Notwithstanding any provision in any employment agreement between the Participant and the Company or any Affiliate, the Participant and the Company hereby irrevocably submit to the exclusive jurisdiction of (i) the United States District Court for the District of Delaware and (ii) the courts of the State of Delaware for the purposes of any action, suit or other proceeding arising out of this Award Agreement or the Plan. The Participant and the Company agree to commence any such action, suit or proceeding either in the United States District Court for the District of Delaware or, if such action, suit or other proceeding may not be brought in such court for jurisdictional reasons, in the courts of the State of Delaware. The Participant and the Company further agree that service of any process, summons, notice or document by U.S. registered mail (or its equivalent in the Participant's country of residence) to the applicable address set forth in Section 13 below shall be effective service of process for any action, suit or proceeding in Delaware with respect to any matters to which the Participant has submitted to jurisdiction in this Section 12(a). The Participant and the Company irrevocably and unconditionally waive any objection to the laying of venue of any action, suit or proceeding arising out of this Award Agreement or the Plan in (A) the United States District Court for the District of Delaware, or (B) the courts of the State of Delaware, and hereby and thereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

(b) Waiver of Jury Trial. Notwithstanding any provision in the Participant's employment agreement, if any, between the Participant and the Company, the Participant and the Company hereby waive, to the fullest extent permitted by applicable law, any right either may have to a trial by jury in respect to any litigation directly or indirectly arising out of, under or in connection with this Award Agreement or the Plan.

(c) Confidentiality. The Participant hereby agrees to keep confidential the existence of, and any information concerning, a dispute described in this Section 12, except that the Participant may disclose information concerning such dispute to the court that is considering such dispute or to the Participant's legal counsel (provided that such counsel agrees not to disclose any such information other than as necessary to the prosecution or defense of the dispute).

SECTION 13. **Notice**. All notices, requests, demands and other communications required or permitted to be given under the terms of this Award Agreement shall be in writing and shall be deemed to have been duly given when delivered by hand or overnight courier or three Business Days after they have been mailed by U.S. registered mail (or its equivalent in the Participant's country of residence), return receipt requested, postage prepaid, addressed to the other party as set forth below:

If to the Company:	First Solar, Inc. 350 W Washington Street, Suite 600 Tempe, AZ 85281 Attention: Stock Plan Administrator
If to the Participant:	To the address most recently supplied to the Company and set forth in the Company's records

The parties may change the address to which notices under this Award Agreement shall be sent by providing written notice to the other in the manner specified above. For this purpose, "Business Day" means a day that is not a Saturday, a Sunday or a day on which banking institutions are legally permitted to be closed in Phoenix, Arizona, U.S.

SECTION 14. **Governing Law**. This Award Agreement shall be deemed to be made in the State of Delaware, and the validity, construction and effect of this Award Agreement in all respects shall be determined in accordance with the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

SECTION 15. **Headings**. Headings are given to the Sections and subsections of this Award Agreement solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Award Agreement or any provision thereof.

SECTION 16. **Country-Specific or Other Addenda**.

(a) Notwithstanding any provisions in this Award Agreement or the Plan, this Award shall be subject to such special terms and conditions set forth in any Addendum attached hereto ("Addendum") or as may later become applicable, as described herein.

(b) If the Participant becomes subject to the laws of a jurisdiction to which an Addendum applies, the special terms and conditions for such jurisdiction will apply to this Award to the extent the Committee determines that the application of such terms and conditions is necessary or advisable to comply with local laws or to facilitate the administration of the Plan; and provided the imposition of the term or condition will not result in any adverse accounting expense with respect to the Award.

(c) Any Addenda attached hereto shall be considered a part of this Award Agreement.

SECTION 17. **Severability**. The provisions of this Award Agreement are severable, and, if any one or more provisions are determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions nevertheless shall be binding and enforceable.

SECTION 18. **Amendment of this Award Agreement**. The Committee may waive any conditions or rights under, amend any terms of, or alter, suspend, discontinue, cancel or terminate this Award Agreement prospectively or retroactively; provided, however, that any such waiver, amendment, alteration, suspension, discontinuance, cancellation or termination that would materially and adversely impair the Participant's rights under this Award Agreement shall not to that extent be effective without the Participant's consent (it being understood,

notwithstanding the foregoing proviso, that this Award Agreement and the Award shall be subject to the provisions of Section 7(c) of the Plan).

SECTION 19. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on the Participant's participation in the Plan and on the Award, to the extent that the Company determines it is necessary or advisable to comply with local law or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

SECTION 20. **Acceptance of Terms and Conditions**. As a condition to receipt of this Award, the Participant confirms that he/she has read and understood the documents relating to this Award (i.e., the Plan, this Award Agreement, including any Addendum) and accepts the terms of those documents accordingly.

SECTION 21. **Counterparts**. Where signature of this Award Agreement is contemplated in the Grant Notice or any Addendum, this Award Agreement may be signed in counterparts, with the same effect as if the signatures thereto and hereto were upon the same instrument.

SECTION 22. **Code Section 409A**. This Award is intended to qualify for the "short-term deferral" exemption from Section 409A of the Code, and the provisions of this Award Agreement will be interpreted, operated, and administered in a manner consistent with these intentions. Anything to the contrary in the Plan or this Award Agreement requiring the consent of the Participant notwithstanding, the Company reserves the right, to the extent the Company deems necessary or advisable in its sole discretion, to unilaterally amend or modify the Plan and/or this Award Agreement to ensure that the Award qualifies for exemption from or complies with Section 409A of the Code; provided, however, that the Company makes no representations that the Award will be exempt from or comply with Section 409A of the Code, and makes no undertaking to preclude Section 409A of the Code from applying to the Award, and the Company will have no liability to the Participant or any other party if a payment under this Award Agreement that is intended to be exempt from, or compliant with, Section 409A of the Code is not so exempt or compliant or for any action taken by the Committee with respect thereto.

SECTION 23. **Waiver**. The Participant acknowledges that a waiver by the Company of breach of any provision of the Award Agreement shall not operate or be considered as a waiver of any other provision of the Award Agreement, or of any subsequent breach by the Participant or any other participant.

SECTION 24. **Foreign Asset/Account, Exchange Control and Tax Reporting**. The Participant acknowledges that, depending on his or her country, the Participant may be subject to foreign asset/account, exchange control and/or tax reporting requirements as a result of the acquisition, holding and/or transfer of cash derived from his or her participation in the Plan in, to and/or from a brokerage/bank account or legal entity located outside the Participant's country. The applicable laws of the Participant's country may require that the Participant report such accounts, assets, the balances therein, the value thereof and/or the transactions related thereto to the applicable authorities in such country. The Participant acknowledges that he or she is responsible for ensuring compliance with any applicable foreign asset/account, exchange control and tax reporting requirements and should consult his or her personal legal advisor on this matter.

SECTION 25. **Entire Agreement**. This Award Agreement (including any addenda), the Grant Notice and the Plan contain the entire agreement and understanding of the parties hereto with respect to the subject matter contained herein and supersede all prior communications, representations and negotiations in respect thereto.

ADDENDUM
ADDITIONAL TERMS AND CONDITIONS APPLICABLE TO
AWARD AGREEMENT (CASH-009)

TERMS AND CONDITIONS

This Addendum, which is part of the Award Agreement, includes additional terms and conditions that govern the Award and that will apply to the Participant if he or she is a citizen of or resides in one of the countries listed below. Capitalized terms that are not defined in this Addendum shall have the meanings used or defined in the Award Agreement or the Plan.

NOTIFICATIONS

This Addendum also includes information regarding securities, exchange control and certain other issues of which the Participant should be aware with respect to his or her participation in the Plan. The information is based on the securities, exchange control and other laws in effect in the countries set forth below as of September 2020. Such laws are often complex and change frequently. As a result, the Participant should not rely solely on this Addendum for information relating to the consequences of participating in the Plan because such information may be outdated when the Participant's Award vests.

In addition, the information set forth in this Addendum is general in nature and may not apply to the Participant's particular situation. As a result, the Company is not in a position to assure the Participant of any particular result. The Participant therefore should seek appropriate professional advice as to the application of relevant laws in the Participant's country to the Participant's particular situation.

Finally, if the Participant is a citizen or resident of a country other than the one in which he or she currently is working, or transfers to a different country after the Grant Date, the information set forth in this Addendum may not apply to the Participant.

ALL COUNTRIES OUTSIDE THE U.S.

Consent to Personal Data Processing and Transfer. By accepting the Award via the Company's acceptance procedure, the Participant is declaring that he or she agrees with the data processing practices described herein and consents to the collection, processing and use of Personal Data (as defined below) by the Company and the transfer of Personal Data to the recipients mentioned herein, including recipients located in countries which do not adduce an adequate level of protection from a European (or other) data protection law perspective, for the purposes described herein.

(a) Declaration of Consent. The Participant understands that the Participant must review the following information about the processing of the Participant's personal data by or on behalf of the Company or the Employer as described in this Award Agreement and any materials related to the Award (the "Personal Data") and declare his or her consent. As regards the processing of the Participant's Personal Data in connection with the Plan and this Award Agreement, the Participant understands that the Company is the controller of the Participant's Personal Data.

(b) Data Processing and Legal Basis. The Company collects, uses and otherwise processes Personal Data about the Participant for purposes of implementing, administering and managing the Plan. The Personal Data processed by the Company includes, without limitation, the Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport number or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company or its Affiliates, details of all Awards or any other entitlement to shares of stock or equivalent benefits

awarded, canceled, exercised, vested, unvested or outstanding in the Participant's favor. The legal basis for the processing of the Participant's Personal Data, where required, is the Participant's consent.

(c) Stock Plan Administration Service Providers. The Participant understands that the Company transfers the Participant's Personal Data, or parts thereof, to (i) Fidelity Stock Plan Services, LLC (and its affiliated companies), an independent service provider based in the United States which assists the Company with the implementation, administration and management of the Plan and (ii) My Equity Comp (and its affiliated companies), an independent service provider based in the United States which assists the Company with the preparation of tax forms and tax returns. In the future, the Company may select different service providers and share the Participant's Personal Data with such different service providers that serves the Company in a similar manner. The Participant will be asked to agree on separate terms and data processing practices with the service provider, which is a condition of the Participant's ability to participate in the Plan.

(d) International Data Transfers. The Company and, as of the date hereof, any third parties assisting in the implementation, administration and management of the Plan, such as Fidelity Stock Plan Services, LLC and My Equity Comp, are based in the United States. If the Participant is located outside the United States, the Participant's country may have enacted data privacy laws that are different from the laws of the United States. The Company's legal basis for the transfer of the Participant's Personal Data is the Participant's consent.

(e) Data Retention. The Company will process the Participant's Personal Data only as long as is necessary to implement, administer and manage the Participant's participation in the Plan, or to comply with legal or regulatory obligations, including under tax and securities laws. In the latter case, the Participant understands and acknowledges that the Company's legal basis for the processing of the Participant's Personal Data would be compliance with the relevant laws or regulations. When the Company no longer needs the Participant's Personal Data for any of the above purposes, the Participant understands the Company will remove it from its systems.

(f) Voluntariness and Consequences of Denial/Withdrawal of Consent. The Participant understands that any participation in the Plan and his or her consent are purely voluntary. The Participant may deny or later withdraw his or her consent at any time, with future effect and for any or no reason. If the Participant denies or later withdraws his or her consent, the Company can no longer offer participation in the Plan or grant awards to the Participant or administer or maintain such awards, and the Participant will no longer be eligible to participate in the Plan. The Participant further understands that denial or withdrawal of his or her consent would not affect his or her status or salary as an employee or his or her career and that the Participant would merely forfeit the opportunities associated with the Plan.

(g) Data Subject Rights. The data subject rights regarding the processing of personal data vary depending on the applicable law and that, depending on where the Participant is based and subject to the conditions set out in the applicable law, the Participant may have, without limitation, the rights to (i) inquire whether and what kind of Personal Data the Company holds about the Participant and how it is processed, and to access or request copies of such Personal Data, (ii) request the correction or supplementation of Personal Data about the Participant that is inaccurate, incomplete or out- of-date in light of the purposes underlying the processing, (iii) obtain the erasure of Personal Data no longer necessary for the purposes underlying the processing, (iv) request the Company to restrict the processing of the Participant's Personal Data in certain situations where the Participant feels its processing is inappropriate, (v) object, in certain circumstances, to the processing of Personal Data for legitimate interests, and to (vi)request portability of the Participant's Personal Data that the Participant has actively or passively provided to the Company (which does not include data derived or inferred from the collected data), where the processing of such Personal Data is based on consent or the Participant's employment and is carried out by automated means. In case of concerns, the Participant may also have the right to lodge a complaint with the competent local data protection authority. Further, to receive clarification of, or to exercise any of, the Participant's rights the Participant should contact the Participant's local human resources representative.

Language. The Participant acknowledges that he or she is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow the Participant to understand the terms and

conditions of this Award Agreement. If the Participant receives the Award Agreement or any other document related to the Plan translated into a language other than English and if the meaning of the translated version is different than the English version, the English version will control.

AUSTRALIA

There are no country-specific provisions.

BELGIUM

NOTIFICATIONS

Tax Reporting Notification. The Participant must report any taxable income attributable to the Award on the Participant's annual tax return.

Foreign Asset/Account Reporting Notification. The Participant must report any bank accounts opened and maintained outside Belgium on the Participant's annual tax return. In a separate report, the Participant is required to report to the National Bank of Belgium any bank accounts opened and maintained outside Belgium. This report, as well as additional information on how to complete it, can be found on the website of the National Bank of Belgium, www.nbb.be, under the Kredietcentrales / Centrales des crédits caption.

BRAZIL

TERMS AND CONDITIONS

Compliance with Law. By accepting the Award, the Participant agrees to comply with applicable Brazilian laws and pay any and all applicable taxes associated with the cash payment upon vesting of the Award.

Not a Form of Remuneration. By accepting the Award, the Participant agrees, for all legal purposes, that (i) the benefits provided under the Award are the result of commercial transactions unrelated to the Participant's employment, (ii) the Award is not part of the terms and conditions of the Participant's employment, and (iii) the income from the Award, if any, is not part of the Participant's remuneration from employment.

Labor Law Acknowledgement. By accepting the Award, the Participant agrees that cash will be issued to the Participant only if the vesting conditions are met.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds assets and rights outside Brazil with an aggregate value exceeding US$100,000, the Participant will be required to prepare and submit to the Central Bank of Brazil an annual declaration of such assets and rights, including: (i) bank deposits; (ii) loans; (iii) financing transactions; (iv) leases; (v) direct investments; (vi) portfolio investments; (vii) financial derivatives investments; and (viii) other investments, including real estate and other assets. In addition, if the Participant holds such assets and rights outside Brazil with an aggregate value exceeding US$100,000,000, then quarterly reporting to the Central Bank of Brazil is required.

Please note that foreign individuals holding Brazilian visas are considered Brazilian residents for purposes of this reporting requirement and must declare at least the assets held abroad that were acquired subsequent to the date of admittance as a resident of Brazil. Individuals holding assets and rights outside Brazil valued at less than US$100,000 are not required to submit a declaration. Please note that the US$100,000 threshold may be changed annually.

Tax on Financial Transaction ("IOF"). Cross-border financial transactions relating to Award may be subject to the IOF (tax on financial transactions). The Participant should consult with his or her personal tax advisor for additional details.

CANADA

TERMS AND CONDITIONS

Termination of Employment. The following provision replaces Section 7(i) of the Award Agreement:

Except as otherwise provided by the Committee or the Grant Notice, in the event of termination of the Participant's employment (regardless of the reason for such termination and whether or not later found invalid, unlawful or in breach of employment laws in the jurisdiction where the Participant is employed or the terms of the Participant's employment agreement, if any), the Participant's right to vest in the Award under the Plan, if any, will terminate effective as of the date that is the earlier of (i) the date on which the Participant's employment is terminated by the Company or the Employer, (ii) the date on which the Participant receives a notice of termination of employment from the Company or the Employer, or (iii) the date on which the Participant is no longer providing active services to the Company or Employer, regardless of any period during which notice, pay in lieu of notice or related payments or damages are provided or required to be provided under local law. The Participant will not earn or be entitled to any pro-rated vesting for that portion of time before the date on which the Participant's right to vest terminates, nor will the Participant be entitled to any compensation for lost vesting. In the event the date on which the Participant is no longer actively providing services cannot be reasonably determined under the terms of this Award Agreement, the Committee shall have the exclusive discretion to determine when the Participant is no longer employed for purposes of the Award (including whether the Participant may still be considered to be providing services while on a leave of absence).

The following terms and conditions apply if the Participant is in Quebec:

Authorization to Release and Transfer Necessary Personal Information. The following provision supplements the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby authorizes the Company and the Company's representatives to discuss with and obtain all relevant information from all personnel, professional or not, involved in the administration and operation of the Plan. The Participant further authorizes the Company and/or any Affiliate to disclose and discuss the Plan with their advisors. The Participant further authorizes the Company and any Affiliate to record and keep such information in the Participant's employment file.

French Language Acknowledgment. The following provision supplements the "Language" provision set forth above in this Addendum:

The parties acknowledge that it is their express wish that this Award Agreement, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or directly hereto, be drawn up in English.

Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention, ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the total cost of the Participant's foreign specified property (including cash held outside Canada) exceeds C$100,000 at any time during the year, the Participant must report all of his or her foreign specified property on Form T1135 (Foreign Income Verification Statement). The Participant should consult with his or her personal tax advisor to ensure compliance with any reporting requirements.

CHILE

There are no country-specific provisions.

CHINA

There are no country-specific provisions.

FRANCE

TERMS AND CONDITIONS

Language Consent. By accepting the Award, the Participant confirms having read and understood the Plan and the Award Agreement, including all terms and conditions included therein, which were provided in the English language. Participant accepts the terms of those documents accordingly.

En acceptant ces <<Award>>, le Participant confirme avoir lu et compris le Plan et le convention, incluant tous leurs termes et conditions, qui ont été transmis en langue anglaise. Le Participant accepte les dispositions de ces documents en connaissance de cause.

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. If the Participant holds securities or maintains a foreign bank account, this must be reported to the French tax authorities when filing his or her annual tax return, whether such accounts are open, current or closed. Failure to comply could trigger significant penalties. The Participant should consult with his or her personal tax advisor to ensure compliance with applicable reporting obligations.

GERMANY

NOTIFICATIONS

Exchange Control Notification. Cross-border payments in excess of €12,500 must be reported monthly to the German Federal Bank. The Participant is responsible for satisfying the reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment is made. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. No report is required for payments less than €12,500.

HONDURAS

There are no country-specific provisions.

INDIA

NOTIFICATIONS

Foreign Asset/Account Reporting Notification. The Participant is required to declare any foreign bank accounts and foreign financial assets in the Participant's annual tax return. It is the Participant's responsibility to comply with this reporting obligation and the Participant should consult with his or her personal tax advisor in this regard.

INDONESIA

TERMS AND CONDITIONS

Language Consent and Notification. By accepting the Award, the Participant (i) confirms having read and understood the documents relating to this grant (*i.e.*, the Plan and the Award Agreement) which were provided in the English language, (ii) accepts the terms of those documents accordingly, and (iii) agrees not to challenge the validity of this document based on Law No. 24 of 2009 on National Flag, Language, Coat of Arms and National Anthem or the implementing Presidential Regulation (when issued).

Persetujuan dan Pemberitahuan Bahasa. Dengan menerima Penghargaan, Peserta (i) mengkonfirmasi bahwa dirinya telah membaca dan mengerti dokumen-dokumen yang terkait dengan pemberian ini (yaitu, Program dan Perjanjian Penghargaan) yang disediakan dalam Bahasa Inggris, (ii) menerima syarat-syarat dari dokumen-dokumen tersebut, dan (iii) setuju untuk tidak mengajukan keberatan atas keberlakuan dokumen ini berdasarkan Undang-Undang No. 24 Tahun 2009 tentang Bendera, Bahasa, dan Lambang Negara, Serta Lagu Kebangsaan atau Peraturan Presiden pelaksananya (ketika diterbitkan).

JAPAN

There are no country-specific provisions.

JORDAN

There are no country-specific provisions.

MALAYSIA

TERMS AND CONDITIONS

Data Privacy. The following provision replaces the "Consent to Personal Data Processing and Transfer" provision set forth above in this Addendum:

The Participant hereby explicitly, voluntarily and unambiguously consents to the collection, use and transfer, in electronic or other form, of his or her personal data as described in the Award Agreement and any other Plan participation materials by and among, as applicable, the Company, the Employer and any other Affiliate or any third parties authorized by same in assisting in the implementation, administration and management of the Participant's participation in the Plan.	***Peserta dengan ini secara eksplicit, secara sukarela dan tanpa sebarang keraguan mengizinkan pengumpulan, penggunaan dan pemindahan, dalam bentuk elektronik atau lain-lain, data peribadinya seperti yang dinyatakan dalam Perjanjian Penganugerahan ini dan apa-apa bahan penyertaan Pelan oleh dan di antara, sebagaimana yang berkenaan, Syarikat, Penerima Perkhidmatan dan Syarikat Induk atau Anak Syarikat lain atau mana-mana pihak ketiga yang diberi kuasa oleh yang sama untuk membantu dalam pelaksanaan, pentadbiran dan pengurusan penyertaan Peserta dalam Pelan tersebut.***
The Participant may have previously provided the Company and the Employer with, and the Company and the Employer may hold, certain personal information about the Participant, including, but not limited to, his or her name, home address, email address and telephone number, date of birth, social insurance number, passport or other identification number, salary, nationality, job title, any directorships held in the Company, details of all Awards or any other entitlement in the Participant's favor ("Data"), for the exclusive purpose of implementing, administering and managing the Plan.	***Sebelum ini, Peserta mungkin telah membekalkan Syarikat dan Penerima Perkhidmatan dengan, dan Syarikat dan Penerima Perkhidmatan mungkin memegang, maklumat peribadi tertentu tentang Peserta, termasuk, tetapi tidak terhad kepada, namanya, alamat rumah dan nombor telefon, alamat emel, tarikh lahir, insurans sosia, nombor pasport atau pengenalan lain, gaji, kewarganegaraan, jawatan, apa-apa jawatan pengarah yang dipegang dalam Syarikat,butir-butir semua Anugerah atau apa-apa hak bagi faedah Peserta ("Data"), untuk tujuan yang eksklusif bagi melaksanakan, mentadbir dan menguruskan Pelan tersebut.***
The Participant also authorizes any transfer of Data, as may be required, to such service provider as may be selected by the Company from time to time, which is assisting the Company with the implementation, administration and management of the Plan. The Participant acknowledges that these recipients may be located in the Participant's country or elsewhere, and that the recipient's country (e.g., the United States) may have different data privacy laws and protections to the Participant's country, which may not give the same level of protection to Data. The Participant understands that he or she may request a list with the names and addresses of any potential recipients of Data by contacting his or her local human resources representative. The Participant authorizes the Company, the stock plan service provider and any other possible recipients which may assist the Company (presently or in the future) with implementing, administering and managing the Participant's participation in the Plan to receive, possess, use, retain and transfer Data, in electronic or other form, for the sole purpose of implementing, administering and managing the Participant's participation in the Plan. The Participant understands that Data will be held only as long as is necessary to implement, administer and manage his or her participation in the Plan.	***Peserta juga memberi kuasa untuk membuat apa-apa pemindahan Data, sebagaimana yang diperlukan, kepada pembekal perkhidmatan sebagaimana yang dipilih oleh Syarikat dari semasa ke semasa, yang membantu Syarikat dalam pelaksanaan, pentadbiran dan pengurusan Pelan . Peserta mengakui bahawa penerima-penerima ini mungkin berada di negara Peserta atau di tempat lain, dan bahawa negara penerima (contohnya, Amerika Syarikat) mungkin mempunyai undang-undang privasi data dan perlindungan yang berbeza daripada negara Peserta, yang mungkin tidak boleh memberi tahap perlindungan yang sama kepada Data. Peserta faham bahawa dia boleh meminta senarai nama dan alamat mana-mana penerima Data dengan menghubungi wakil sumber manusia tempatannya. Peserta memberi kuasa kepada Syarikat, pembekal perkhidmatan pelan saham dan mana-mana penerima lain yang mungkin membantu Syarikat (masa sekarang atau pada masa depan) untuk melaksanakan, mentadbir dan menguruskan penyertaan Peserta dalam Pelan tersebut untuk menerima, memiliki, menggunakan, mengekalkan dan memindahkan Data, dalam bentuk elektronik atau lain-lain, semata-mata dengan tujuan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut. Peserta faham bahawa Data akan dipegang hanya untuk tempoh yang diperlukan untuk melaksanakan, mentadbir dan menguruskan penyertaannya dalam Pelan tersebut.***

The Participant understands that he or she may, at any time, view Data, request additional information about the storage and processing of Data, require any necessary amendments to Data or refuse or withdraw the consents herein, in any case, without cost, by contacting in writing his or her local human resources representative, whose contact details are: ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia.*** ***Further, the Participant understands that he or she is providing the consents herein on a purely voluntary basis. If the Participant does not consent, or if the Participant later seeks to revoke the consent, his or her status and career with the Company and the Employer will not be adversely affected; the only adverse consequence of refusing or withdrawing the consent is that the Company would not be able to grant future Awards to the Participant or administer or maintain such Awards. Therefore, the Participant understands that refusing or withdrawing his or her consent may affect his or her ability to participate in the Plan. For more information on the consequences of the refusal to consent or withdrawal of consent, the Participant understands that he or she may contact his or her local human resources representative.***	***Peserta faham bahawa dia boleh, pada bila-bila masa, melihat data, meminta maklumat tambahan mengenai penyimpanan dan pemprosesan Data, meminta bahawa pindaan-pindaan dilaksanakan ke atas Data atau menolak atau menarik balik persetujuan dalam ini, dalam mana-mana kes, tanpa kos, dengan menghubungi secara bertulis wakil sumber manusia tempatannya , di mana butir-butir hubungannya adalah*** ***No 8, Jalan Hi-Tech 3/3*** ***Zon Indusrtri Fasa 3, Kulim Hi Tech Park*** ***09000, Kulim, Kedah Darul Aman Malaysia.*** ***Selanjutnya, Pesertamemahami bahawa dia memberikan persetujuan di sini secara sukarela. Jika Peserta tidak bersetuju, atau jika Peserta kemudian membatalkan persetujuannya , statusnya sebagai Pemberi Perkhidmatan dan kerjayanya dengan Penerima Perkhidmatan tidak akan terjejas; satunya akibat buruk jika dia tidak bersetuju atau menarik balik persetujuannya adalah bahawa Syarikat tidak akan dapat memberikan*** A***nugerah kepada Peserta atau mentadbir atau mengekalkan*** A***nugerah tersebut. Oleh itu, Peserta faham bahawa keengganan atau penarikan balik persetujuannya boleh menjejaskan keupayaannya untuk mengambil bahagian dalam Pelan tersebut. Untuk maklumat lanjut mengenai akibat keengganannya untuk memberikan keizinan atau penarikan balik keizinan, Peserta fahami bahawa dia boleh menghubungi wakil sumber manusia tempatannya .***

MEXICO

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that he or she understands and agrees that: (a) the Award is not related to the salary and other contractual benefits provided to the Participant by the Employer; and (b) any modification of the Plan or its termination shall not constitute a change or impairment of the terms and conditions of the Participant's employment.

Policy Statement. The invitation the Company is making under the Plan is unilateral and discretionary and, therefore, the Company reserves the absolute right to amend it and discontinue it at any time without any liability to the Participant.

The Company, with registered offices at 350 West Washington Street, Suite 600, Tempe, Arizona 85281, United States of America is solely responsible for the administration of the Plan and participation in the Plan does not, in any way, establish an employment relationship between the Participant and the Company since the Participant is participating in the Plan on a wholly commercial basis and the sole employer is a Mexican legal entity that employs the Participant and to which he/she is subordinated, nor does it establish any rights between the Participant and the Employer.

Plan Document Acknowledgment. By accepting the Award, the Participant acknowledges that he or she has received a copy of the Plan, has reviewed the Plan and the Award Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Award Agreement.

The Participant further acknowledges that having read and specifically and expressly approved the terms and conditions in the Section 7 of the Award Agreement, in which the following is clearly described and established: (a)

participation in the Plan does not constitute an acquired right; (b) the Plan and participation in the Plan is offered by the Company on a wholly discretionary basis; and (c) participation in the Plan is voluntary.

Finally, the Participant does not reserve any action or right to bring any claim against the Company for any compensation or damages as a result of participation in the Plan and the Participant therefore grants a full and broad release to the Employer and the Company (including its Affiliates) with respect to any claim that may arise under the Plan.

Spanish Translation

Reconocimiento de la Ley Laboral. Al aceptar el Beneficio, el Participante reconoce y acepta que: (a) el Beneficio no se encuentra relacionado con su salario ni con otras prestaciones contractuales concedidas por parte del Patrón; y (b) cualquier modificación del Plan o su terminación no constituye un cambio o impedimento de los términos y condiciones del empleo del Participante.

Declaración de la Política. La invitación que hace la Compañía bajo el Plan es unilateral y discrecional, por lo que la Compañía se reserva el derecho absoluto de modificar e interrumpir el mismo en cualquier tiempo, sin ninguna responsabilidad para el Participante.

La Compañía, con oficinas ubicadas en 350 West Washington Street, Suite 600. Tempe, Arizona 85281, Estados Unidos de America, es la única responsable por la administración y la participación en el Plan, así como de la adquisición de acciones, por lo que de ninguna manera podrá establecerse una relación de trabajo entre el Participante y la Compañía, ya que el Participante participa únicamente en de forma comercial y que su único patrón lo es Patrón es una empresa legal Mexicana a quien se encuentra subordinado; la participación en el Plan tampoco genera ningún derecho entre el Participante y el Patrón.

Reconocimiento del Plan de Documentos. Al aceptar el Beneficio, el Participante reconoce que ha recibido una copia del Plan, que lo ha revisado junto con el Convenio, y que ha entendido y aceptado completamente las disposiciones contenidas en el Plan y en el Convenio.

Adicionalmente, al firmar el presente documento, el Participante reconoce que ha leído y aprobado de manera expresa y específica los términos y condiciones contenidos en el apartado 7 del Convenio, el cual claramente establece y describe: (a) que la participación en el Plan no constituye un derecho adquirido; (b) que el Plan y la participación en el mismo es ofrecido por la Compañía en forma totalmente discrecional; (c) que la participación en el Plan es voluntaria; y (d) que la Compañía, así como sus afiliadas no son responsables por cualquier detrimento en el valor de las acciones que integran el Beneficio.

Finalmente, el Participante acepta no reservarse ninguna acción o derecho para interponer una demanda en contra de la Compañía por compensación, daño o perjuicio alguno como resultado de su participación en el Plan y en consecuencia, otorga al Patrón el más amplio y completo finiquito que en derecho proceda, así como a la Compañía y sus Afiliadas, respecto a cualquier demanda que pudiera originarse derivada del Plan.

MOROCCO

There are no country-specific provisions.

NETHERLANDS

TERMS AND CONDITIONS

Labor Law Acknowledgment. By accepting the Award, the Participant acknowledges that: (i) the Award is intended as an incentive to remain employed with the Employer and is not intended as remuneration for labor performed; and (ii) the Award is not intended to replace any pension rights or compensation.

PHILIPPINES

There are no country-specific provisions.

SAUDI ARABIA

There are no country-specific provisions.

SINGAPORE

There are no country-specific provisions.

THAILAND

There are no country-specific provisions.

TURKEY

There are no country-specific provisions.

UNITED ARAB EMIRATES

There are no country-specific provisions.

VIETNAM

There are no country-specific provisions.

EXHIBIT 21.1

SUBSIDIARIES OF FIRST SOLAR, INC.

Name	Jurisdiction
First Solar Electric, LLC	United States
First Solar Electric (California), Inc.	United States
First Solar Development, LLC	United States
First Solar Asset Management, LLC	United States
First Solar FE Holdings Pte Ltd	Singapore
First Solar Malaysia Sdn. Bhd.	Malaysia
First Solar Holdings GmbH	Germany
First Solar Manufacturing GmbH	Germany
First Solar GmbH	Germany
First Solar Vietnam Holdings Pte. Ltd.	Singapore
First Solar Vietnam Manufacturing Co Ltd	Vietnam
First Solar Power India Private Limited	India
First Solar Energía Limitada	Chile
Parque Solar Fotovoltaico Luz del Norte SpA	Chile
First Solar Development (Canada), Inc.	Canada
First Solar Japan GK	Japan
First Solar (Australia) Pty Ltd	Australia

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-204461) and Form S-3 (No. 333-248842) of First Solar, Inc. of our report dated February 25, 2021 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Phoenix, Arizona
February 25, 2021

EXHIBIT 31.01

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241, AS
ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mark R. Widmar, certify that:

(1) I have reviewed the Annual Report on Form 10-K of First Solar, Inc., a Delaware corporation, for the period ended December 31, 2020, as filed with the Securities and Exchange Commission;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of and for, the periods presented in this report;

(4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 25, 2021	By:	/s/ MARK R. WIDMAR
	Name:	Mark R. Widmar
	Title:	Chief Executive Officer

EXHIBIT 31.02

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241, AS
ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Alexander R. Bradley, certify that:

(1) I have reviewed the Annual Report on Form 10-K of First Solar, Inc., a Delaware corporation, for the period ended December 31, 2020, as filed with the Securities and Exchange Commission;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of and for, the periods presented in this report;

(4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an Annual Report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 25, 2021	By:	/s/ ALEXANDER R. BRADLEY
	Name:	Alexander R. Bradley
	Title:	Chief Financial Officer

EXHIBIT 32.01

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of First Solar, Inc., a Delaware corporation, for the period ended December 31, 2020, as filed with the Securities and Exchange Commission, each of the undersigned officers of First Solar, Inc. certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his respective knowledge:

(1) the annual report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the annual report fairly presents, in all material respects, the financial condition and results of operations of First Solar, Inc. for the periods presented therein.

February 25, 2021	By:	/s/ MARK R. WIDMAR
	Name:	Mark R. Widmar
	Title:	Chief Executive Officer

February 25, 2021	By:	/s/ ALEXANDER R. BRADLEY
	Name:	Alexander R. Bradley
	Title:	Chief Financial Officer