FIRST SOLAR, INC.
Form 10-K
February 24, 2016

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K
(Mark one)

[x] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2015

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	Name of each exchange on which registered
Common stock, $0.001 par value	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 [x] 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 [x]
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 [x] No [ ]
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes [x] No [ ]
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer [x]	Accelerated filer [ ]	Non-accelerated filer [ ]	Smaller reporting company [ ]
	(Do not check if a smaller reporting company)		

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes [ ] No [x]

The aggregate market value of the registrant's common stock, $0.001 par value per share, held by non-affiliates of the registrant on June 30, 2015, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $2.8 billion (based on the closing sales price of the registrant's common stock on that date). As of February 19, 2016, 101,767,670 shares of the registrant's common stock, $0.001 par value per share, were issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Annual Report on 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 2016, which will be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Annual Report on Form 10-K relates.

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FIRST SOLAR, INC. AND SUBSIDIARIES

FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2015

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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." Our last three fiscal years ended on December 31, 2015, 2014, and 2013.

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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 (the "Exchange Act") and the Securities Act of 1933, 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: 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 efficiency and balance of systems ("BoS") cost reduction roadmaps, restructuring, product reliability, investments in unconsolidated affiliates, and capital expenditures; our ability to continue to reduce the cost per watt of our solar modules; our ability to reduce the costs to construct PV solar power systems; research and development programs and our ability to improve the conversion efficiency 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," "f "likely," "may," "should," "goal," "target," "might," "will," "could," "predict," "continue," and the negative or plural of these 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. 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. 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 photovoltaic ("PV") modules;
- the market for renewable energy, including solar energy;
- reduction, elimination, or expiration of government subsidies and support programs for solar energy projects;
- our ability to execute on our Long Term Strategic Plan;
- interest rate fluctuations and both our and our customers' ability to secure financing;
- our ability to execute on our solar module and BoS cost reduction roadmaps;
- our ability to attract new customers and to develop and maintain existing customer and supplier relationships;
- changes in, or the failure to comply with, government regulations and environmental, health and safety requirements;
- our competitive position and other key competitive factors;
- environmental responsibility, including with respect to cadmium telluride and other semiconductor materials;
- claims under our limited warranty obligations;
- future collection and recycling costs for solar modules covered by our module collection and recycling program;
- our ability to protect our intellectual property;
- our ability to prevent and/or minimize the impact of cyber attacks or other breaches of our information systems;
- our continued investment in research and development;
- the supply and price of components and raw materials, including cadmium telluride;
- our ability to successfully develop and complete our systems business projects;
- our ability to attract and retain key executive officers and associates;
- general economic and business conditions, including those influenced by international and geopolitical events; and
- all other matters discussed in Item 1A: "Risk Factors," and elsewhere in this Annual Report on Form 10-K.

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

Unit of Power

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”) unless otherwise noted. When referring to our PV solar power systems, the unit of electricity in watts for MW and GW is alternating current (“AC”) unless otherwise noted.

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PART I

Item 1: Business

Company Overview

We are a leading global provider of comprehensive photovoltaic ("PV") solar energy solutions. We design, manufacture, and sell PV solar modules with an advanced thin-film semiconductor technology and also develop, design, construct, and sell PV solar power systems that primarily use the modules we manufacture. Additionally, we provide operations and maintenance ("O&M") services to system owners that use solar modules manufactured by us or by other third-party manufacturers. We have substantial, ongoing research and development efforts focused on module and system level innovations. We are the world's largest thin-film PV solar module manufacturer and one of the world's largest PV solar module manufacturers. Our mission is to create enduring value by enabling a world powered by clean, affordable solar energy.

In addressing overall global demand for PV solar electricity, our differentiated, fully integrated systems business can provide competitively priced utility-scale PV solar energy solutions to system owners and low cost electricity to end-users. Our systems business has enabled us to drive cost reduction across the value chain and deliver compelling solutions to our customers. With our systems business, we believe we are in a position to continue to expand our business in key geographic markets with a compelling need for mass-scale PV electricity. We are committed to continually lowering the cost of solar electricity and plan to compete on an economic basis with conventional fossil-fuel-based peaking power generation.

In furtherance of our goal of delivering affordable solar electricity, we are continually focused on reducing PV solar power system costs in five primary areas: module manufacturing costs, BoS costs (consisting of the costs of the components of a PV solar power system other than the modules that we manufacture, such as mounting, inverters, cables, tracker equipment, and installation labor costs), project development costs, the cost of capital, and operating costs. First, with respect to our module manufacturing costs, we believe our advanced technology has allowed us to reduce our average module manufacturing costs to among the lowest in the world for modules produced on a commercial scale, based on publicly available information. We believe that our module manufacturing cost is competitive, on a comparable basis with, or is lower than, those of traditional crystalline silicon solar module manufacturers. By continuing to improve module conversion efficiency and energy density, increasing production line throughput, and lowering raw material costs, we believe that we can further reduce our manufacturing costs per watt and maintain cost competitiveness with traditional crystalline silicon solar module manufacturers. Second, with respect to our planned BoS cost reduction roadmap, we have aggressive programs which target key improvements in components and system design, which, when combined with continued improvements in module conversion efficiency, volume procurement around standardized hardware platforms, the use of innovative installation techniques and know-how, and accelerated installation times, are expected to result in continued reductions in our BoS costs and drive a lower system levelized cost of energy ("LCOE"). Third, with respect to our project development costs, we seek optimal site locations in an effort to maximize solar resources and minimize transmission and permitting costs, and to accelerate lead times to electricity generation. Fourth, with respect to the cost of capital, by continuing to demonstrate the financial viability and operational performance of our utility-scale PV solar power systems, we believe we can continue to lower the cost of capital associated with our systems, thereby further enhancing the economic viability of our projects and lowering the cost of electricity generated by such systems incorporating our modules and technology. The remaining primary system cost relates to the actual operating costs of a system, which includes the O&M costs of the plant. We believe that our O&M services are an important aspect to further reductions in the LCOE of a PV solar power system through seamless grid integration, increased reliability, and maximization of the availability of the systems we operate and maintain for our customers.

In addition to enabling the system cost reductions described above, we believe that combining our vertical integration across the value chain enables us to be more competitive, accelerate the adoption of our technology in PV solar power systems, and successfully expand into key geographic markets around the world. Our vertically integrated capabilities enable us to maximize value and mitigate risk for our customers and offer valuable benefits such as grid integration and stabilization, thereby positioning us to deliver meaningful PV solar energy solutions to varied energy problems worldwide. We seek to offer leadership across the entire solar value chain, resulting in more reliable and cost effective PV solar energy solutions for our customers, and furthering our mission to create enduring value by enabling a world powered by clean, affordable solar electricity.

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Market Overview

Solar energy is a growing form of renewable energy with numerous economic and environmental benefits that make it an attractive complement to, and/or substitute for, traditional forms of electricity 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 even below the retail price of electricity in many markets. The rapid price decline that PV solar energy has experienced in recent years opens new possibilities to develop systems in some locations with limited or no financial incentives. 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 electricity generation assets. Once installed, PV solar power systems can function for 25 or more years with relatively less maintenance or oversight, compared to traditional forms of electricity generation. In addition to these economic benefits, PV solar has several environmental benefits. For example, PV solar power systems do not generate any greenhouse gas or other emissions and use no or minimal amounts of water compared to traditional forms of electricity generation. Solar markets worldwide 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 make solar power more affordable to new markets, and we have continued to develop our localized presence and expertise in such markets.

The solar industry continues to be characterized by intense pricing competition, both at the module and system levels. In the aggregate, we believe manufacturers of solar modules and cells have, relative to global demand, significant installed production capacity 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 put pressure on pricing. Additionally, intense competition at the systems level can result in an environment in which pricing falls rapidly, thereby further increasing demand for solar energy solutions but constraining the ability for project developers; engineering, procurement, and construction (“EPC”) companies; and vertically-integrated solar companies such as First Solar to sustain meaningful and consistent profitability. In light of such market realities, we are executing our Long Term Strategic Plan, Vision 2020 (“Long Term Strategic Plan”) described below, under which we are focusing on our competitive strengths. Such strengths include our advanced module and system technologies as well as our differentiated, vertically-integrated business model that enables us to provide utility-scale PV solar energy solutions to key geographic markets with immediate electricity needs.

Strategy and Competitive Strengths

To build upon our industry leading position and to remain one of the preferred providers of PV solar energy solutions, we are pursuing the following strategies: differentiation, sustainable growth, and financial viability.

Differentiation

- First Solar is vertically integrated across substantially the entire solar value chain. Many of the efficiencies, cost reductions, and capabilities that we deliver to our customers are not easily replicable for other industry participants that are not similarly vertically integrated. The First Solar model offers PV solar energy solutions that benefit from our capabilities, including: project development; engineering and plant optimization; grid integration and plant control systems; advanced PV modules; trackers and fixed mounting systems; procurement and construction consulting; and operations and maintenance services.

- First Solar systems deliver solar energy that is cost competitive with certain conventional energy sources, depending on the location and application. Our solutions diversify the energy portfolio and reduce the risk of fuel-price volatility, while delivering an LCOE that is cost competitive in some circumstances with electricity generated from fossil fuels. With the absence of commodity price risk, solar energy has a meaningful value proposition, including a long-term

fixed price with relatively low operating costs and reliable energy. When compared to the price of power derived from a conventional source of energy, a fixed price cannot be achieved unless the cost of hedging is included. Hedging costs of a commodity such as natural gas, along with the costs of credit support required for a long-term hedge, can significantly increase conventional energy costs.

- First Solar's bankability and financial credibility enable us to offer meaningful module and system warranties after installation, which provide us with a competitive advantage relative to some of our peers in the solar sector in the context of project financing.

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- We offer one of the most bankable utility-scale solar energy solutions in the world. With our proven experience, financial stability, and ability to maximize the use of our leading technology in debt-financed projects, our bankable energy solutions provide access to capital and relatively low-cost financing to leading utilities and energy investors.

- First Solar has developed advanced grid integration technology, which provides PV plants the ability to actively stabilize the electricity grid and operate more like traditional electricity generation plants. Advanced plant features of our grid integration systems include the ability to regulate voltage, curtail active power when necessary, limit the rate of change of power, prevent trips during faults and disturbances, and react to changes in grid frequency.

- First Solar has made significant improvements to BoS components to optimize the entire PV power plant and reduce lifecycle costs. Our proprietary data acquisition, plant control, and mounting systems are examples of plant optimizing technologies that enable us to provide reliable and predictable solar energy, increased energy yields and system availabilities, faster construction velocities, and a lower LCOE. Additionally, our advanced plant controls enable seamless integration of our utility-scale solar plants onto the electricity grid, providing vital grid support services such as voltage and power factor regulation, active and reactive power control, ramp rate control, frequency regulation, and fault ride-through.

- We invest significant resources in research and development ("R&D"), both at the module and system level. First Solar's R&D model differentiates us from much of our competition due to its vertical integration, from advanced research to product development, manufacturing, and applications. Our module conversion efficiency has improved on average more than half a percent every year for the last ten years. First Solar has recently achieved two new world records for cadmium telluride ("CdTe") PV efficiency, achieving an independently certified research cell efficiency of 22.1% and a full area module efficiency of 18.2%. Our module R&D efforts are being focused on continually improving the energy density of our modules and otherwise driving improvements in the lifetime energy production of our modules while simultaneously integrating our module and BoS offerings for cost effective, productive, and reliable PV power plants.

- In many climates, First Solar's CdTe modules provide a significant energy yield advantage over conventional crystalline silicon solar modules of equivalent efficiency rating. For example, in humid climates, our CdTe modules provide a superior spectral response, and in hot climates, our CdTe modules provide a superior temperature coefficient. As a result, at temperatures above 25°C (standard test conditions), our CdTe modules produce more energy than competing conventional crystalline silicon solar modules with an equivalent efficiency rating. This advantage provides stronger system performance in high temperature climates, which is particularly advantageous as the vast majority of a system's generation, on average (in typical high insolation climates), occurs when module temperatures are above 25°C. As a result, our PV solar power systems can produce more annual energy at a lower LCOE than competing systems with the same nameplate capacity.

- First Solar CdTe PV modules are manufactured in a high-throughput, automated environment that integrates all manufacturing steps into a continuous flow line. At the outset, a sheet of glass enters the production line, and in less than 2.5 hours it is transformed into a complete PV module, which is flash tested, boxed, and ready for shipment. We currently have 30 manufacturing lines worldwide and 2.8 GW of annualized manufacturing capacity. Each line is currently capable of producing approximately 2,500 modules per day; totaling approximately 71,600 modules each day across 30 lines. About every second, a completed PV module rolls off a First Solar manufacturing line somewhere in the world. With expected increases in module efficiency as per our roadmap, our capacity has a potential to scale up to approximately 3.1 GW in 2017 based on the 30 existing lines. In addition, our stored manufacturing equipment includes up to 8 lines either from our former German factories or from manufacturing facilities that we put on hold with capacity of up to approximately 0.8 GW. As a result, our total available manufacturing capacity includes up to 3.9 GW of either installed or stored capacity that can be readily installed and deployed in production and become a significant enabler of our future growth. In January 2015, we marked a new milestone by achieving over 10 GW of

solar capacity installed globally using our CdTe PV modules manufactured to date, making us the first thin-film PV module manufacturer in the world to achieve this milestone.

O&M is a key driver for power plants to deliver on their projected revenues. By leveraging our extensive experience in plant optimization and advanced diagnostics, we have developed one of the most advanced O&M programs in the industry. With more than 5.6 GW DC of utility-scale PV plants under the O&M program, we maintain a fleet average system availability greater than 99.5%. Our experienced O&M staff enhances the probability that our customers' power plants produce the energy predicted in their energy model. Our products and services are engineered to maximize energy output and revenue for our customers while significantly reducing their unplanned maintenance costs. Plant owners benefit from predictable expenses over the life of the contract and reduced risk of energy loss. Our goal is to optimize our customers' power plants to generate the maximum amount of energy and revenue under their respective power purchase agreements

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("PPA") throughout the operational life of the plants. We have made significant investments in O&M technologies in order to develop and create a scalable and sustainable O&M platform. Our O&M program is compliant with the North American Electric Reliability Corporation ("NERC") standards and is designed to be scalable to accommodate the growing O&M needs of customers worldwide. We believe our O&M expertise is a significant differentiator, as it is difficult for many competitors to replicate this experience.

- We manage, as owner or partial owner, project assets to preserve and enhance shareholder value. We provide seamless management of projects from initial land development through construction, commissioning, and operation bringing to bear all of our experience in each of these phases.

Sustainable Growth

In executing our Long Term Strategic Plan, we are focusing on providing PV solar energy solutions using our modules to key geographic markets that we believe have a compelling need for mass-scale PV electricity, including markets throughout the Americas, Asia, the Middle East, and Africa. As part of our Long Term Strategic Plan, we are focusing on opportunities in which our PV solar energy solutions can compete directly with fossil fuel offerings on an LCOE or similar basis, or complement such fossil fuel electricity offerings. Execution of the Long Term Strategic Plan entails a prioritization of market opportunities worldwide relative to our core strengths and a corresponding allocation of resources around the globe. This prioritization involves a focus on our core utility-scale offerings and exists within a current market environment that includes rooftop and distributed generation solar, particularly in the U.S. While it is unclear how rooftop and distributed generation solar might impact our core utility-scale offerings in the next several years, we believe that utility-scale solar will continue to be a compelling solar offering for companies with technology and cost leadership and will continue to represent an increasing portion of the overall electricity generation mix.

We are closely evaluating and managing the appropriate level of resources required as we pursue the most advantageous and cost effective projects and partnerships in our target markets. We have dedicated, and intend to continue to dedicate, significant capital and human resources to reduce the total installed cost of PV solar energy, to optimize the design and logistics around our PV solar energy solutions, and to ensure that our solutions integrate well into the overall electricity ecosystem of each specific market. We expect that, over time, an increasing portion of our consolidated net sales, operating income, and cash flows may come from solar offerings in the key geographic markets described above as we execute on our Long Term Strategic Plan. The timing, execution, and financial impacts of our Long Term Strategic Plan are subject to risks and uncertainties, as described in Item 1A: "Risk Factors." We are focusing 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 high solar resources, significant current or projected electricity demand, and/or relatively high existing electricity prices. As part of these efforts, we continue to expand or reallocate resources globally, including business development, sales personnel, and other supporting professional staff in target markets. Accordingly, we may shift current costs or incur additional costs over time as we establish a localized business presence in these target markets.

Joint ventures or other strategic arrangements with partners are a key part of our Long Term Strategic Plan, and we generally use such arrangements to expedite our penetration of various key markets and establish relationships with potential customers. We also enter into joint ventures or strategic arrangements with customers or other entities to maximize the value of particular projects. Some of these arrangements involve, and are expected in the future to involve, significant investments or other allocations of capital. We continue to develop relationships with policymakers, regulators, and end customers in these strategic markets with a view to creating opportunities for utility-scale PV solar power systems. We sell such systems directly to end customers, including utilities, independent power producers, commercial and industrial companies, and other system owners. Depending on the market opportunity, our sales offerings may range from module-only sales, to module sales with a range of development, EPC

services, and other solutions, to full turn-key PV solar power system sales. We expect these offerings to continue to evolve over time as we work with our customers to optimize how our PV solar energy solutions can best meet our customers' energy and economic needs.

Financial Viability

First Solar's commitment is to create long-term shareholder value and generate returns on invested capital in excess of its weighted average cost of capital over that time horizon. Despite substantial downward pressure on the price of solar modules due to pricing competition and significant capacity in the industry, we have continued to deliver strong financial performance and liquidity. As planned, we expect to continue to drive operating expense efficiencies and improvements while still investing in growth, the continued development of our global sales capabilities, and our R&D roadmap. We seek to balance our incentive compensation and decision-making processes to ensure we direct our efforts and investments towards long-term profitable and sustainable growth with appropriate returns on invested capital and reinvest excess returns back into the business.

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Offerings and Capabilities

Offerings

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. We have designed our customer solutions according to the needs of the following different business areas. Although we have substantial experience with the utility-scale power plant and advanced PV module offerings described below, certain other offerings are in various stages of development.

- Utility-Scale Power Plant. We have extensive, proven experience in delivering reliable grid-connected bulk power systems for utility-scale generation. First Solar's grid-connected PV solar power systems diversify the energy portfolio, reduce fossil-fuel consumption, reduce the risk of fuel price volatility, and save costs, proving that centralized solar generation can deliver reliable and affordable solar electricity to the grid in many places around the world. Benefits of our grid-connected bulk power system solutions include reduction of fuel imports and improvements in energy security; diversification of the energy portfolio and reductions of risk related to fuel-price volatility; enhanced peaking generation and faster time-to-power; improved grid reliability and stability with advanced PV plant controls; and managed PV variability through accurate forecasting.

- Advanced PV Modules. Our CdTe PV module outperforms conventional crystalline silicon solar modules with equal power rating due in part to superior spectral response and temperature coefficient in many climates. At temperatures above 25°C, First Solar modules produce more energy than conventional crystalline silicon solar modules with equal nameplate efficiency ratings. Our TetraSun crystalline silicon module is designed for applications where space is at a premium or customers prefer a high power density solution. With a proprietary cell architecture, our crystalline silicon modules offer one of the industry's highest power ratings and conversion efficiencies and lowest temperature coefficients, resulting in high energy density in space-constrained installations.

- Module Plus. With module plus, we have further enhanced the performance of our industry-leading PV solutions by improving the process of purchasing an integrated module and mounting system. Module plus features the reliability of our advanced thin-film PV modules, paired with a range of specially designed mounting systems that are optimized for accelerated installation and maximum energy return. Accordingly, our module plus customers have access to our advanced PV modules and portfolio of additional system components by leveraging our global supplier network to streamline project logistics and minimize risks through a single system component supplier.

- Commercial and Industrial. We are in the process of developing system solutions for commercial and industrial applications. We believe the wholesale commercial and industrial market, while in its early stages, is a promising opportunity for First Solar, given our large-scale PV system expertise. A recent example is our announcement in February 2015 that Apple Inc. had committed to purchase electricity from our California Flats solar project under construction in Monterey County, California. Apple will receive electricity from 130 MW AC of the project under a 25-year power purchase agreement, the largest agreement in the industry to provide clean energy to a commercial end user.

- Community Solar. Our community solar offering addresses the residential and small business sectors, providing a broad range of customers 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. First Solar's expertise in utility-scale generation and module technology, paired with the

community solar experience of our partner Clean Energy Collective, allows residential power consumers to “go solar,” including those who live in apartment buildings or whose home rooftops cannot accommodate solar panels. We are currently working with strategic partners to develop a commercially scalable community solar offering.

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Full Suite of Capabilities

The First Solar model offers PV solar energy solutions with superior value and less risk with our expertise across substantially the entire solar value chain, including:

- Project Development. During project development, we obtain land and land rights for the development of PV solar power systems incorporating our modules, negotiate long-term PPAs with potential purchasers of the electricity to be generated by those plants or develop plants in regulated markets where feed-in-tariff ("FiT") or similar structures are in place, manage the interconnection and transmission process, negotiate agreements to interconnect the systems to the electricity grid, and obtain the permits that are required prior to the construction of PV solar power systems, including applicable environmental and land-use permits. We also buy projects in various stages of development and continue developing those projects with system designs incorporating our own modules. We sell developed PV solar power systems to 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.

- EPC Services. We provide EPC services to projects developed by us, to projects developed by independent solar power project developers, and directly to system owners such as utilities. EPC services include engineering design and related services, BoS procurement, advanced development of grid integration solutions, and construction contracting and management. Depending on the customer and market need, we may provide our full EPC services or any combination of individual products and services within our EPC capabilities. An example of such combination of individual services would be providing engineering design and procurement of BoS parts ("EP" services) for a third-party constructing a PV solar power system.

- O&M Services. We have a comprehensive O&M service offering covering more than 5.6 GW DC of utility-scale PV solar power systems. Utilizing a state of the art Global Operations Center, our team of O&M experts provide a variety of services to optimize system performance and comply with PPAs, other agreements, and regulations. We offer our O&M services to solar power plant owners that use either our solar modules or modules manufactured by other third-party manufacturers.

- Tracker and Other Balance of Systems. BoS consists of all of the non-module components of the solar power plant. We sell certain components of the solar system including single-axis trackers, which are manufactured by a third-party using our proprietary technology. We offer several proprietary mounting solutions that have been custom-designed by First Solar engineers to integrate exclusively with our modules and reduce system costs. Project-specific factors such as the local irradiance, weather, soil, wind, and topography will dictate the optimal mounting solution for each project. With a single-axis tracker technology and multiple fixed mounting solutions to choose from, we offer a suite of mounting systems that have been engineered to maximize energy output, increase installation velocity, and reduce costs. Our proprietary tracker systems follow the sun throughout the day to maximize energy output and generate up to 25% more energy than fixed mounting systems. In addition, our vertical integration combined with partner collaboration has enabled us to continue to make system-level improvements, such as PV solar power systems combining our CdTe modules with 1500 volt inverter/transformer systems.

Global Markets

We have established and are continuing to develop a localized business presence on six continents, as described below. 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 PV solar energy solutions can be a compelling and economically viable solution to energy needs in different markets and applications.

The Americas

- United States. Multiple PV markets in the United States, which accounted for 87% of our 2015 net sales, exemplify several of the criteria critical for a sustainable solar market: (i) sizeable electricity demand, particularly around growing population centers and industrial areas, (ii) high existing power prices, 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 more traditional forms of energy generation. The market penetration of PV solar is impacted by certain state and federal support programs, including the 30% federal investment tax credit, as described under “Support Programs.” We have significant experience and a market leadership position in developing, engineering, constructing, and maintaining utility-scale power plants in the United States, particularly in California and other southwestern states,

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and increasingly in southeastern states. Currently, our solar projects in the United States account for a majority of the 1.6 GW AC advanced-stage pipeline of projects that we are either currently constructing or expect to construct. See Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Systems Project Pipeline” for more information about these projects.

- Chile. Chile is a promising region for PV solar in that certain markets are characterized by abundant solar resources and potential demand in the form of mining or industrial activity. The Chilean government’s National Energy Strategy includes expansion of the country’s renewable energy capacity to 20% of its total generated power by 2025. Throughout 2015, we continued construction of our 141 MW AC Luz del Norte PV solar power system located near Copiapó, Chile. Energy from the Luz del Norte system will be supplied into the Chilean Central Interconnected System, contributing significantly toward Chile’s renewable energy goal. Once completed, Luz del Norte will be one of the largest solar systems in the region. We also expect to participate in upcoming auctions for additional PPAs in the region.

- Other Americas. We are developing our business in other countries in the Americas including Brazil, Mexico, and certain Central American countries.

Europe, the Middle East, and Africa

- Europe. While PV solar adoption in prior years was driven to a large degree by feed-in-tariffs and other incentive programs in Germany, France, Italy, and Spain, PV solar has entered its next phase in which growth will ultimately be determined by the degree to which PV solar energy solutions can compete economically with more traditional forms of electricity generation, particularly in areas with high prevailing electricity prices, strong electricity demand, and strong solar resources. In particular, Germany, France, and the Netherlands are all running tenders in which large-scale PV solar projects can bid for capacity.

In Europe, which accounted for approximately 2% of our 2015 net sales, we have been engaged in business development and module sales activities in the United Kingdom (“U.K.”), Germany, France, and the Netherlands, and we are actively evaluating additional sales opportunities in Turkey, Israel, and emerging Southeastern European markets as well as mature Western European solar markets. We are party to a joint venture with Belectric Solarkraftwerke GmbH to develop solar power projects in Europe, North Africa, the United States, and the Middle East. Under the terms of the joint venture, First Solar provides its thin-film modules, selected components, and value-added services, while Belectric provides its advanced balance of systems and a range of service capabilities. Both companies’ engineering, procurement, and construction contributions vary by project and geography.

- The Middle East. The solar energy market potential in the Middle East continues to be driven by strong fundamentals, including attractive economics, abundant solar resources, and robust policy. The United Arab Emirates (“UAE”), Egypt, and Jordan are important markets for utility-scale solar with indications of future potential coming from Saudi Arabia, Oman, and Kuwait. The UAE, Egypt, and Jordan lead the region with policy mechanisms designed to ramp up the share of renewable energy in their generation portfolios. While their motives for investing in solar energy range from energy security to the diversification of their generation portfolios to the minimization of domestic consumption of hydrocarbons, the common factor is that the economics of PV solar have made it a compelling choice as a generation source.

Jordan and Egypt have actively facilitated the development of the independent power production sector in their countries as a means of responding to urgent energy needs. For example, Jordan has committed to installing 600 MW of PV solar capacity by 2020, while Egypt has progressed in its over-subscribed multi-gigawatt solar tender. In the rest of the Arabian Gulf, the region’s state-owned hydrocarbon companies are becoming more involved in regional solar programs. Examples include initiatives spearheaded by Saudi Aramco, Petroleum Development Oman, and the

Kuwait Oil Company. However, as with any emerging market, challenges remain and these are primarily related to evolving policy and legislation, prevailing energy subsidies, infrastructure, the availability of financing, the level of competition, and geopolitical risk.

Since establishing a presence in the Middle East in 2013, First Solar has focused on the region's utility-scale segment while pursuing a range of opportunities. In addition to constructing the 13 MW DC first phase of the Mohammed bin Rashid Al Maktoum Solar Park in Dubai, First Solar will also be supplying the modules for the Park's 200 MW AC second phase. In Jordan, First Solar is constructing the 53 MW AC Shams Ma'an PV solar power system, which is expected to account for approximately 1% of Jordan's annual energy output upon completion in 2016. Additionally, First Solar has provisionally been allocated 50 MW in Egypt's Feed-in-Tariff program. As a result of these and other projects, First Solar expects to be the leading provider of PV solutions in the Middle East, with a projected installed capacity of at least 271 MW across the region by 2017.

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- Africa. Africa offers strong potential for PV solar, which can play a useful role in meeting the region's varying energy needs. Our focus in the region is primarily the sale of modules and BoS components for utility-scale projects. In South Africa, the government is procuring bids under a competitive tender process in support of a target of procuring over 18 GW of renewable energy (wind, solar, etc.) by 2030 as part of South Africa's Integrated Resource Plan of which over 9.4 GW was allocated to PV solar. Additionally, we are working with our channel partners, such as Caterpillar Inc., to provide hybrid diesel and/or PV solutions to the mining industry in the region. Whether mines are grid-connected or relying on diesel generators, solar energy, with its cost competitiveness and reliability, represents a meaningful value proposition for the industry. Deploying PV hybrid solutions that supplement existing power sources, such as the electricity grid or diesel generators, can help mining companies address their daytime electricity supply challenges, while minimizing costs and reducing environmental impacts.

Asia-Pacific ("APAC") and India

- Australia. Australia is a promising region for PV solar. The Australian PV solar market is expected to experience growth in 2016 after a pause in new development activity in 2014 and 2015. In Australia, which accounted for approximately 5% of our 2015 net sales, the solar industry was adversely impacted during 2014 and 2015 by regulatory uncertainty related to an extended review of the federal government's national Renewable Energy Target ("RET") and potential de-funding of the federal government's Australia Renewable Energy Agency and Clean Energy Finance Corporation, which offer grant-based funding for PV solar projects in both grid-connected and off-grid applications. In June 2015, the federal government announced a compromise position on the RET, setting a target of 33,000 gigawatt hours by 2020. In addition to federal government support, numerous state and territory governments have announced their own support programs. In particular, the Australian Capital Territory announced a reverse auction for utility-scale PV projects, the Queensland government announced PPA support for up to 60 MW of utility-scale PV projects, and the Victorian government announced plans to support renewable energy. In 2015, First Solar retained the title of Australia's largest PV EPC and O&M company. First Solar also completed commissioning of the Nyngan and Broken Hill solar projects (102 MW and 53 MW, respectively), which are the largest solar plants in Australia.

- Japan. Japan has evolving electricity market characteristics, particularly after the 2011 Fukushima Daiichi nuclear disaster, which make it an attractive market for PV solar. One such characteristic is the announcement of new safety standards following the failure of the Fukushima Daiichi nuclear power station, which resulted in the idling of Japan's nuclear reactors, which had historically generated nearly 30% of the country's electricity. Japan has few domestic fossil fuel resources and relies heavily on fossil fuel imports. Accordingly, the Japanese government has announced a long-term goal of dramatically increasing installed solar power capacity and has provided various incentives for solar power installations. As a result, strong solar demand is expected in Japan over the next several years.

In 2015, we completed the construction of three PV solar power systems and commenced the construction of four additional systems. We have also acquired the rights to a 59 MW AC PV solar project in Japan, which is expected to use our CdTe PV modules and begin construction in 2016. We are partnering with local companies to develop, construct, and operate PV solar power systems, which will further mitigate Japan's dependence on nuclear power and fossil fuel imports. Our sales offerings in Japan include both our CdTe modules and high-efficiency crystalline silicon modules as well as O&M services.

- India. There is significant potential for PV solar in India due to its growing energy needs, substantial population centers, lack of electrification to many parts of the country, high energy costs, strong irradiance, and aggressive renewable energy targets set by the government, which include increasing the country's solar capacity to 100 GW by the year 2022. To support this initiative, several key electricity regulations have been announced relating to ramping up renewable purchase obligations, implementing penal provisions for non-compliance with the obligations under the Indian Electricity Act, budgetary allocations under the Central Government for establishing the Green Transmission

Corridor, and the creation of numerous solar parks in various states with dedicated transmission infrastructure to be installed by the government. In addition to these measures, the Central Government also introduced the Renewable Generation Obligations, which will mandate that all thermal power generators must implement new renewable energy generation capacity to match 10% of their new thermal generation capacity. Overall, these policy and regulatory measures have been introduced with an objective of creating significant and sustained demand for PV solar in India. Accordingly, we are working to sell modules and develop utility-scale PV solar projects in India to address the energy and renewable purchase obligation needs of utilities and target the open access industrial and commercial power demand.

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In 2015, we secured rights through a competitive auction to sell power under a 25-year PPA for a cumulative capacity of 75 MW AC to the state owned electricity distribution companies in Telangana. We also have 125 MW AC of existing projects, for which PPAs were secured in 2014. In 2015, we successfully achieved commercial operation of 20 MW AC of our project pipeline and commenced development or construction on 180 MW AC of the remaining pipeline, which is expected to achieve commercial operation during 2016. We continue to maintain our PV module market leadership in India with over 1,000 MW DC of installed modules.

- Other APAC. We are developing our business in other APAC countries including Indonesia, Malaysia, Thailand, and the Philippines. Each of these regions has one or more market characteristics or trends (such as an environment of declining fuel subsidies in Indonesia) which can make PV solar electricity attractive. In China, we continue to evaluate our options and remain committed to our presence, with the goal of developing sales opportunities in the market.

Support Programs

Although our Long Term Strategic Plan provides for First Solar to compete in key markets that do not require solar-specific government subsidies or support programs, in the near term our net sales and profits remain subject to variability based on the availability and size of government subsidies and economic incentives. Support programs for PV solar electricity generation, depending on the jurisdiction, include FiTs, quotas (including renewable portfolio standards and tendering systems), and net energy metering programs. In addition to these support programs, financial incentives for PV solar electricity generation include tax incentives, grants, loans, rebates, and production incentives. Although we expect to become less impacted by, and less dependent on, support programs as we execute our Long Term Strategic Plan, support programs will continue to play varying roles in accelerating the adoption of PV solar systems around the world.

In Europe, renewable energy targets, in conjunction with FiTs, Renewable Obligation Certificates, and other schemes such as tenders for utility-scale PV solar, have contributed to the 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. A 2009 European Union (“EU”) directive on renewable energy, which replaced an earlier 2001 directive, sets varying targets for all EU member states in support of the directive’s goal of a 20% share of energy from renewable sources in the EU by 2020, and requires national action plans that establish clear pathways for the development of renewable energy sources.

Tax incentive programs exist in the U.S. 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 1980’s. In December 2015, the U.S. Congress extended the 30% federal energy investment tax credit (“ITC”) for both residential and commercial solar installations through December 31, 2019. The credit will step down to 26% in 2020, 22% in 2021, and remain at 10% permanently beginning in 2022. The ITC has been an important economic driver of solar installations in the U.S., and its extension is expected to contribute to greater medium-term demand visibility in the U.S. The positive impact of the ITC has depended 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 eventual step-down of the ITC to 10% underscores the need for the LCOE from solar systems to continue to decline and remain competitive with other sources of energy generation.

At the federal level, the Environmental Protection Agency’s adoption of a final Clean Power Plan Rule (the “Rule”) and implementation of the Rule through state plans offered the possibility of increasing the demand for PV solar

generating capacity in certain regions of the U.S. in which PV solar has not historically received significant state-level policy support. However, the adoption and implementation of the Rule has been impacted by litigation against the Rule initiated by states and other stakeholders which has not yet been resolved, and in February 2016, the U.S. Supreme Court stayed implementation of the Rule while such legal challenges are pending. It is therefore premature to assess what the effects of the Rule will be on PV solar markets.

The majority of states in the U.S. have 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 electricity sales to end-user customers from eligible renewable resources, such as solar generating 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 generating facilities. RPS legislation and implementing regulations 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 (certificates representing the generation of renewable energy) qualify for RPS compliance. Measured in terms of the volume of renewable electricity required to meet its RPS mandate, California's RPS program is the most significant in the U.S., and the California market for renewable energy has dominated the western U.S. region for the

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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 amendments enacted by the California Legislature in 2015, the California RPS program now requires utilities and other obligated load serving entities to procure 50% of their retail electricity demand from eligible renewable resources by 2030. In 2015, approximately 60% of our total net sales were derived from our systems projects or third-party module sales to solar power systems in California.

Business Segments

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules, which convert sunlight into electricity. We primarily manufacture CdTe modules and also manufacture high-efficiency crystalline silicon modules. Third-party customers of our components segment include integrators and operators of PV solar power systems. Our second segment is our fully integrated systems business ("systems segment"), through which we provide complete turn-key PV solar power systems, or solar solutions, that draw upon our capabilities, which include (i) project development, (ii) EPC services, and (iii) O&M services, as described in more detail below. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems, which primarily use our solar modules, and we sell such products and services to utilities, independent power producers, commercial and industrial companies, and other system owners. Additionally, within our systems segment, we may own and operate certain of our PV solar power systems for a period of time based on strategic opportunities.

See Note 23 "Segment and Geographical Information" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for further information on our business segments.

Components Business

Our components business involves the design, manufacture, and sale of solar modules which convert sunlight into electricity.

Solar Modules

CdTe Modules. Our flagship module since the inception of First Solar has been manufactured using our advanced CdTe thin-film technology. Each solar module is a glass laminate approximately 2ft x 4ft (60cm x 120cm) in size that encapsulates a CdTe thin-film semiconductor. Our solar modules had an average rated power per module of approximately 107 watts, 95 watts, and 91 watts for 2015, 2014, and 2013, respectively. During 2014, we announced the release of our Series 4™ module, which offers up to 8% more energy than conventional crystalline silicon modules with the same efficiency rating, and is compatible with advanced 1500-volt plant architectures. The Series 4A™ variant features a new anti-reflective coated glass, which enhances energy production. Our semiconductor structure is a single-junction polycrystalline thin-film that uses CdTe as the absorption layer. CdTe has absorption properties that are matched to the solar spectrum and can deliver competitive conversion efficiencies using approximately 1-2% of the amount of semiconductor material that is used to manufacture traditional crystalline silicon solar modules. One of the drivers of First Solar modules' performance advantage over traditional crystalline silicon modules is a lower temperature coefficient, delivering higher energy yields at elevated operating temperatures typical of utility-scale solar power plants in sunny regions.

Crystalline Silicon Modules. In addition to our primary CdTe module technology, we also manufacture crystalline silicon modules made from high-efficiency N-Type Mono cells produced at our facility in Kulim, Malaysia and then assembled into a 60 or 72 cell module by third-party contract manufacturers. When fully ramped, we expect the

facility to have the capacity to produce 55,000 156mm cells per day for a nameplate capacity of 100 MW annually. The standard First Solar 60 cell PV module will have a power rating of 300 watts. Accordingly, our crystalline silicon technology is expected to deliver a very high efficient cell at a much lower manufacturing cost than is currently available in the marketplace.

Descriptions below of our components business relate to our CdTe modules unless otherwise noted.

Manufacturing Process

CdTe Modules. We manufacture our CdTe solar modules on high-throughput integrated production lines in an automated, proprietary, and continuous process. Our solar modules employ a thin layer of semiconductor material to convert sunlight into electricity. Our manufacturing process eliminates the multiple supply chain operators and expensive and time-consuming batch processing steps that are used to produce crystalline silicon solar modules. Currently, we manufacture our solar modules at our Perrysburg, Ohio and Kulim, Malaysia manufacturing facilities.

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We have integrated our CdTe manufacturing processes into a continuous production line with the following three stages: the deposition stage, the cell definition and treatment stage, and 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 etch 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 strength. In the cell definition and treatment stage, we use high speed lasers to transform the large single 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 performance, and we apply a metal terminated sputtered back contact. Finally, 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. A junction box and termination wires are then applied to complete the assembly. The final assembly stage is the only stage in our production line that requires manual processing.

We maintain a robust quality and reliability assurance program that monitors critical process parameters and measures product performance to ensure that industry and internal standards are met. Acceptance testing for both electrical leakage and power measurement on a solar simulator are conducted prior to a module being boxed 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 (“IEC”) and Underwriters Laboratories Inc. (“UL”). These programs assure a high level of product quality and reliability, helping to deliver power performance in the field.

Crystalline Silicon Modules. We manufacture our crystalline silicon cells at our facility in Kulim, Malaysia. The manufacturing process starts with 156mm N-Type mono-crystalline silicon wafers supplied by a variety of wafer suppliers. Incoming wafers are subjected to a series of inspections to ensure that high quality standards are met. The proprietary manufacturing process consists of passivation, annealing, metalization, printing, wet cleans, and electroplating steps and are all fully automated independent steps. Completed cells are tested and binned according to strict performance criteria. The final module assembly is completed by a contract manufacturing company that performs manufacturing to our module specifications using a bill of materials managed by us.

We maintain a robust quality and reliability assurance program that monitors critical process parameters to ensure that industry and internal standards are met. This rigorous set of evaluations is conducted prior to each solar module undergoing acceptance testing for both electrical leakage and power measurement on a solar simulator. The quality and reliability tests complement production surveillance with an ongoing monitoring program, subjecting production modules to accelerated life cycle and stress testing to ensure conformance to IEC and UL requirements. This program assures a high level of product quality and reliability, helping to predict power performance in the field.

Research, Development, and Engineering

We continue to devote substantial resources to research and development with the primary objective of lowering the lifecycle cost of electricity generated by our PV solar power systems. We conduct our research and development activities primarily in the United States. Within our components business, we focus our research and development activities on, among other areas, continuing to increase the conversion efficiency and energy yield of our solar modules and continuously improving durability and manufacturing efficiencies, including throughput improvement, volume ramp, and material cost reduction.

In the course of our research and development activities, we continuously explore and research technologies in our efforts to sustain competitive differentiation in our modules. We typically 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 will provide continuous

improvements and ensure uniform adoption across our production lines. In addition, our CdTe 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 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. We believe that our record cells demonstrate a potential long-term module efficiency entitlement of over 19% using our commercial-scale manufacturing equipment.

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In 2013, we acquired GE's global CdTe solar intellectual property portfolio, setting a course for significant advancement of our PV thin-film solar technology. The combination of the two companies' complementary technologies and First Solar's existing manufacturing capabilities have accelerated the development of CdTe solar module performance and improved efficiency at a manufacturing scale. In addition, GE Global Research and First Solar R&D are collaborating on future technology development to further advance CdTe solar technology pursuant to an agreement through 2016.

For information regarding our research and development expense for the years ended December 31, 2015, 2014, and 2013, See Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations – Results of Operations."

Customers

With respect to our components business, during 2015, we sold the majority of our solar modules (not included in our systems projects) to integrators and operators of systems in India and Great Britain. Third-party module sales represented approximately 6% of our total 2015 net sales. Additionally, we develop, design, construct, and sell PV solar power systems that use the solar modules we manufacture.

During 2015, Southern Power Company, Strata Solar, LLC, and NextEra Energy, Inc. individually accounted for more than 10% of our components segment's net sales, which includes the solar modules used in our systems projects. We are investing in key geographic markets, particularly in areas with abundant solar resources and sizable electricity demand, and as part of such efforts, we are seeking to develop additional customer relationships, which has reduced and is expected to continue to reduce our customer and geographic concentration and dependence.

Competition

The renewable energy, solar energy, and solar module 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 margins and loss of market share. With respect to our components business, our primary sources of competition are currently crystalline silicon solar module manufacturers as well as other thin-film module manufacturers. Certain of our existing or future competitors may be part of larger corporations that have greater financial resources and greater brand name recognition than we do and, as a result, may be better positioned to adapt to changes in the industry or the economy as a whole. Certain 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 module and cell manufacturers, the principal methods of competition include sales price per watt, conversion efficiency, energy yield, reliability, warranty terms, and customer payment terms. If 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, our results of operations could be adversely affected. At December 31, 2015, the global PV industry consisted of more than 150 manufacturers of solar modules and cells. In the aggregate, these manufacturers have, relative to global demand, significant installed production capacity 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 put pressure on pricing, which could adversely affect our results of operations.

In addition, we expect to compete with future entrants into the PV solar industry that offer new technological solutions. We also face competition from semiconductor manufacturers and semiconductor equipment manufacturers or their customers that produce PV solar cells, solar modules, or turn-key production lines. We also face competition from companies that currently offer or are developing other renewable energy technologies (including wind,

hydropower, geothermal, biomass, and tidal technologies) and other power generation sources that employ conventional fossil fuels.

Raw Materials

Our CdTe module manufacturing process uses approximately 30 types of raw materials and components to construct a complete solar module. One critical raw material in our production process is cadmium telluride. Of the other raw materials and components, the following are also critical to our manufacturing process: front glass coated with transparent conductive oxide, other semiconductor materials, organics such as photo resist, tempered back glass, packaging components such as interlayer, cord plate/cord plate cap, junction box, lead wire, and solar connectors. Before we use these materials and components in our manufacturing process, a supplier must undergo a rigorous qualification process. We continually evaluate new suppliers and currently are qualifying several new suppliers and materials. 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. A few of our critical materials or components are single sourced and most others are supplied by a limited number of suppliers.

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CdTe Solar Module Collection and Recycling Program

First Solar is committed to extended producer responsibility and takes into account the environmental impact of its products over their entire life cycle. We established the solar industry's first comprehensive module collection and recycling program. First Solar's module recycling process is designed to enable the recovery of valuable materials, including the glass and encapsulated semiconductor material, for use in new modules or other new products and minimizes the environmental impacts associated with our modules at the end of their useful lives. Approximately 90% of each collected First Solar module can be recycled into materials for use in new products, including new solar modules.

First Solar's recycling services provide plant owners with flexibility in determining end-of-life module disposition. For modules sold under sales arrangements covered under our Solar Module Collection and Recycling Program ("the program"), we include a description of our module collection and recycling obligations. For such modules covered under the program, we agree to cover the costs for the collection and recycling of solar modules, and the end-users agree to notify us, disassemble their systems, package the solar modules for shipment, and revert module ownership rights back to us at the end of the modules' service lives.

The European Union's Waste Electronics and Electrical Equipment ("WEEE") Directive places the obligation of recycling (including collection, treatment, and environmentally sound disposal) of electrical and electronic equipment ("EEE") products upon producers. The WEEE Directive is now applicable to PV solar modules in EU member states. For modules covered under our pre-funded 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. In addition, as a result of the transposition of the WEEE Directive by the EU member states, we will be adjusting our offering in the various EU member states as required to ensure compliance with specific EU member state WEEE regulations.

In addition to achieving substantial environmental benefits, our solar module collection and recycling program may provide us the opportunity to recover certain raw materials and components for reuse in our manufacturing process. We currently have recycling facilities operating at each of our current manufacturing facilities in the U.S. and Malaysia and at our former manufacturing facility location in Germany that produce glass cullet suitable for use in the production of new glass products by a third-party supplier and unrefined semiconductor materials that will be further processed by a third-party supplier and then used to produce semiconductor materials for use in new solar modules.

Solar Module Warranties

We provide a limited PV solar module warranty covering defects in materials and workmanship under normal use and service conditions for 10 years following the transfer of title to our modules. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 97% of their labeled power output rating during the first year, with the warranty coverage reducing by 0.7% every year thereafter throughout the 25-year performance warranty period. Prior to 2014, we warranted that modules installed in accordance with agreed-upon specifications would produce at least 90% of their labeled power output rating during the first 10 years following installation and at least 80% of their labeled power output rating during the following 15 years. In resolving claims under both the defect and power output warranties, we have the option of either repairing or replacing the covered modules or, under the power output warranty, providing additional modules to remedy the power shortfall. We also have the option to make a payment for the then current market price of modules to resolve the claims. Such limited module warranties are standard for module sales and are automatically 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 also offer 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. In addition, 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 typically is 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.

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From time to time, we have taken remediation actions with respect to affected modules beyond our limited warranty, and we 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 obligation could have a material adverse effect on our results of operations if we commit to any such remediation actions.

Systems Business

Through our fully integrated systems business, we provide complete turn-key PV solar power systems, or solar solutions, which may include project development, EPC services, and/or O&M services.

Project Development

Project development activities include: site selection and securing rights to acquire or use the site, obtaining the requisite interconnection and transmission studies, executing an interconnection agreement, obtaining environmental and land-use permits, maintaining effective site control, and entering into a PPA with an off-taker of the power to be generated by the project. 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 FiT structures define the price and terms the utility customer or investor will pay for power produced from the project. Entering into a PPA generally provides the underlying economics needed to finalize development including permitting, beginning construction, arranging financing, and marketing the project for sale to a long-term owner. Depending primarily on the location, stage of development upon our acquisition of the project, and other site attributes, the development cycle typically ranges from one to two years but can 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, write-down capitalized project assets, and the right of the off-taker under the PPA to terminate may be triggered.

EPC Services

EPC services include engineering design and related services, BoS procurement, advanced development of grid integration solutions, and construction contracting and management. We provide the majority of our EPC services to our self-developed projects intended to be sold; however, we also provide EPC services to projects developed by independent solar power project developers, and directly to system owners such as utilities. Depending on the customer and market need, we may provide our full EPC services or any combination of individual products and services within our EPC capabilities.

For PV solar power systems built by us, we typically provide a limited product warranty on BoS parts for defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a system. In resolving claims under such BoS warranties, we have the option of remedying the defect through repair or replacement.

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 year of a system’s operation. Such a test is designed to demonstrate that the actual energy generation for the first year meets or exceeds the modeled energy expectation, after certain adjustments. These adjustments include factors, such as irradiance, weather, module degradation, soiling, curtailment,

and other conditions that may affect a system's energy output but are unrelated to the quality, design, or construction.

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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 may vary by contract, our O&M service arrangements generally include 24/7 system monitoring, certain PPA and other agreement compliance, North American Electric Reliability Corporation 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. 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 of our control as the service provider, such as weather, curtailment, outages, force majeure, and other conditions that may affect system availability.

Customers

With respect to our systems business, our customers consist of utilities, independent power producers, commercial and industrial companies, and other system owners. These customers may purchase completed PV solar power systems, which include our solar modules, or any combination of development, EPC services, and O&M services. During 2015, the substantial majority of our systems business sales were in North America, and the principal customers of our systems business were NextEra Energy, Inc. and Southern Power Company, each of which also accounted for more than 10% of the segment’s 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, including wind, hydropower, geothermal, biomass, and tidal projects. To the extent other solar module manufacturers become more vertically integrated, we expect to face increased competition from such companies as well. We also face competition from other EPC companies and joint venture type arrangements between EPC companies and solar companies. Certain current or potential future competitors may also have a low cost of capital and/or access to foreign capital. While the decline in PV module prices over the last several years has increased interest in solar electricity worldwide, there are limited barriers of entry in many parts of the PV solar value chain, depending on the geographic market. Accordingly, competition at the systems level can be intense, thereby exerting downward pressure on systems level profit margins industry-wide, to the extent competitors are willing and able to bid aggressively low prices for new projects and PPAs, using low cost assumptions for modules, BoS components, installation, maintenance, and other costs. Please see Item 1A: “Risk Factors – Competition at the systems level can be intense, thereby potentially exerting downward pressure on systems level profit margins industry-wide, which could reduce our profitability and adversely affect our results of operations.”

Research, Development, and Engineering

Our systems business research and development activities are primarily focused on the objective of lowering the LCOE through reductions in BoS costs, improved system design, and energy yield enhancements associated with PV solar power systems that use our modules. These R&D efforts are also focused on continuing to improve our systems in terms of grid reliability. We conduct our research and development activities for the systems business primarily in the United States. Innovations related to system design, hardware platforms, inverters, trackers, and installation techniques and know-how, among other things, can and are expected in the future to continue to reduce BoS costs,

which can represent a significant portion of the costs associated with the construction of a typical utility-scale PV solar power system.

For information regarding our research and development expense for the years ended December 31, 2015, 2014, and 2013, see Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Results of Operations.”

Own and Operate

From time to time, we may temporarily own and operate certain PV solar power systems, often with the intention to sell at a later date. The ability to do so allows us to gain control of the sales process, provide a lower risk profile to a future buyer of a system, and improve our ability to drive higher eventual sale values. As of December 31, 2015, we owned and operated a number of systems in various geographic markets. As an owner and operator for certain of these systems, we may be subject to the authority of the Federal Energy Regulatory Commission (“FERC”), as well as various other local, state, and federal regulatory bodies. For more information about risks related to owning and operating PV solar power systems, please see Item 1A: “Risk Factors – As an

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owner and operator of PV solar power systems that deliver electricity to the grid, certain of our affiliated entities may be regulated as public utilities under U.S. federal and state law, which could adversely affect the cost of doing business and limit our growth." 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 research and development and are currently pursuing patent applications in the U.S. and other countries. Our patent applications and any future patent applications might 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 U.S. and a number of foreign countries for "First Solar" and "First Solar and Design."

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 module manufacturing process, 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 research and development 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 employment with us. We also require our customers and business partners to enter into confidentiality agreements before we disclose any sensitive aspects of our modules, technology, or business plans.

We have not been subject to any material intellectual property infringement or misappropriation claims.

Environmental, Health, and Safety Matters

Our operations include the use, handling, storage, transportation, generation, and disposal of hazardous materials and hazardous wastes. We are subject to various national, 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. 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 financial condition, cash flows, and profitability."

Corporate History

In February 2006, we were incorporated as a Delaware corporation. Our common stock has been listed on The NASDAQ Global Select Market under the symbol “FSLR” since our initial public offering in November 2006. In October 2009, our common stock was added to the S&P 500 Index, making First Solar the first, and currently only, pure-play renewable energy company in the index.

Associates

As of December 31, 2015, we had approximately 6,350 associates (our term for full and part-time employees), including approximately 4,760 in module manufacturing positions and approximately 560 associates that work directly in our systems business. The remainder of our associates are in research and development, sales and marketing, and general and administrative positions. None of our associates are currently represented by labor unions or covered by a collective bargaining agreement. As we 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 believe that our relations with our associates are good.

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Information About Geographic Areas

We have significant marketing, distribution, and manufacturing operations both within and outside the United States. Currently, we manufacture our solar modules at our Perrysburg, Ohio and Kulim, Malaysia manufacturing facilities.

In 2015, the foreign country with the greatest concentration risk was Australia, which accounted for 5% of our consolidated net sales. As part of our Long Term Strategic Plan, we are in the process of expanding our operations to various countries across the world, including countries in the Americas, Asia, the Middle East, and Africa. As a result, we are subject to the legal, tax, political, social, regulatory, and economic conditions of an increasing number of foreign jurisdictions. The international nature of our operations subjects us to a number of risks, including fluctuations in exchange rates, adverse changes in foreign laws or regulatory requirements, and tariffs, taxes, and other trade restrictions. See Item 1A: “Risk Factors – Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in foreign countries” and “Risk Factors – We may be unable to fully execute on our Long Term Strategic Plan, which could have a material adverse effect on our business, financial condition, or results of operations. ” See Note 23 “Segment and Geographical Information” to our consolidated financial statements included in this Annual Report on Form 10-K for information about our net sales and long-lived assets by geographic region.

Available Information

We maintain a website at http://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 these materials with, or furnish them to, the Securities and Exchange Commission (“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 will typically be included within the Investor Relations section of our website at http://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 public may also read and copy any materials that we file with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website at http://www.sec.gov that contains reports and other information regarding issuers, such as First Solar, that file electronically with the SEC.

Executive Officers of the Registrant

Our executive officers and their ages and positions as of February 24, 2016, were as follows:

Name	Age	Position
James A. Hughes	53	Chief Executive Officer
Mark R. Widmar	50	Chief Financial Officer
Joseph G. Kishkill	51	President, International
Georges Antoun	53	President, U.S.
Philip Tymen deJong	56	Chief Operating Officer
Raffi Garabedian	49	Chief Technology Officer
Paul J. Kaleta	60	Executive Vice President & General Counsel
Timothy Rebhorn	54	Executive Vice President, Corporate Development & Strategic Marketing

Christopher R. Bueter	52	Executive Vice President, Human Resources

James A. Hughes joined First Solar in March 2012 as Chief Commercial Officer and was appointed Chief Executive Officer in May 2012. Prior to joining First Solar, Mr. Hughes served, from October 2007 until April 2011, as Chief Executive Officer and Director of AEI Services LLC, which owned and operated power distribution, power generation (both thermal and renewable), natural gas transportation and services, and natural gas distribution businesses in emerging markets worldwide. From 2004 to 2007, he engaged in principal investing with a privately held company based in Houston, Texas that focused on micro-cap investments in North American distressed manufacturing assets. Previously, he served, from 2002 until March 2004, as President and Chief Operating Officer of Prisma Energy International, which was formed out of former Enron interests in international electric and natural gas utilities. Prior to that role, Mr. Hughes spent almost a decade with Enron Corporation in positions that

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included President and Chief Operating Officer of Enron Global Assets, President and Chief Operating Officer of Enron Asia Pacific, Africa, and China, and as Assistant General Counsel of Enron International. Mr. Hughes is a Director of TPI Composites, Inc., a leading manufacturer of composite wind blades for the wind energy market. He is Chairman of the board of directors of the Los Angeles branch of the Federal Reserve Bank of San Francisco. Mr. Hughes holds a juris doctor degree from the University of Texas at Austin School of Law, a Certificate of Completion in international business law from Queen Mary's College, University of London, and a bachelor's degree in business administration from Southern Methodist University.

Mark R. Widmar joined First Solar in April 2011 as Chief Financial Officer and served as First Solar's Chief Accounting Officer from February 2012 through June 2015. Mr. Widmar also serves as CFO and as a director on the board of 8point3 Energy Partners LP, 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, as well as President, Engineered Solutions from January 2011 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 prior to joining NCR. 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.

Joseph G. Kishkill was appointed President, International, in July 2015. Mr. Kishkill has leadership responsibility for global business development, sales, and international public affairs, with a primary focus on sustainable growth in emerging markets. Mr. Kishkill joined First Solar in September 2013 as Chief Commercial Officer and is a proven leader in business development and growth in global markets, and thrives in an environment of cultural diversity. He also serves as a director on the board of 8point3 Energy Partners LP. Prior to joining First Solar, Mr. Kishkill was President, Eastern Hemisphere Operations, for Exterran Energy Solutions, LP and Senior Vice President of Exterran Holdings, Inc., a global provider of natural gas, petroleum, and water treatment production services. He previously led Exterran's business in the Latin America region. Prior to joining Exterran's predecessor company in 2002, Mr. Kishkill held positions of increasing responsibility with Enron Corporation from 1990 to 2001, advancing to Chief Executive Officer for South America. During his career, Mr. Kishkill has been based in Dubai, Brazil, and Argentina and has provided management services for energy projects and pipelines throughout South America. Mr. Kishkill holds a Master in Business Administration degree from the Harvard Graduate School of Business Administration and holds a Bachelor of Science degree in Electrical Engineering from Brown University.

Georges Antoun was appointed President, U.S. in July 2015. Mr. Antoun has leadership responsibility for the identification, development, and execution of all projects in the United States. Prior to this appointment, Mr. Antoun served as Chief Operating Officer since joining First Solar in July 2012. Mr. Antoun has over 20 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. Prior to 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. He has also held senior management positions at Newbridge Networks, a data and voice networking company, and Nynex (now Verizon Communications), where he was part of its Science and Technology Division. Mr. Antoun is a member of the board of directors of Ruckus

Wireless, Inc. and Violin Memory, Inc., both publicly-traded companies. Mr. Antoun 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 has comprehensive leadership responsibility for areas including manufacturing, EPC, quality and reliability, supply chain, and product management. 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.

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Raffi Garabedian has been the Chief Technology Officer of First Solar, Inc. since May 2012 and manages the Company's technology, photovoltaic module, and power plant system products and roadmaps. Mr. Garabedian joined First Solar in June 2008 as Director of Disruptive Technologies. Prior to First Solar, Mr. Garabedian spent over 15 years in the MEMS (micro-electro-mechanical systems) industry, developing new products ranging from automotive engine control sensors to fiberoptic telecommunications switching systems. He was the founding CEO of Touchdown Technologies, Inc., which was acquired by Verigy, as well as Micromachines Inc., which was acquired by Kavlico. Mr. Garabedian is named on approximately 28 issued U.S. patents. Mr. Garabedian earned a Bachelor of Science degree in Electrical Engineering from Rensselaer Polytechnic Institute and a Master of Science degree in Electrical Engineering with a focus on semiconductor and microsystems technology from the University of California Davis.

Paul Kaleta joined First Solar in March 2014 as Executive Vice President & General Counsel. Prior to joining First Solar, Mr. Kaleta was Executive Vice President, General Counsel, Shared Services & Secretary, and Chief Compliance Officer for NV Energy, Inc., which was acquired by Berkshire Hathaway's Energy Group in December 2013. Before that, he was Vice President and General Counsel for Koch Industries, Inc., one of the world's largest privately held companies with diverse businesses worldwide, including refining, petrochemicals, and commodity trading, among others. He also served in a number of legal and other leadership roles for Koch companies. Before joining Koch, he was Vice President and General Counsel of Niagara Mohawk Power Corporation (now part of National Grid). In private practice, Mr. Kaleta was an equity partner in the Washington D.C. law firm Swidler Berlin LLP and an associate in the Washington D.C. office of Skadden, Arps, Slate, Meagher & Flom LLP. He also served as a federal judicial clerk. Mr. Kaleta is the founding chair of the Southern Nevada Chapter of the "I Have a Dream Foundation" (now "Core Academy-powered by The Rogers Foundation"), a member of the Client Advisory Council of Lex Mundi, and has taught both energy law and business ethics and leadership, as an adjunct professor, among other professional and community activities. Mr. Kaleta holds a juris doctor degree from Georgetown University Law Center and a bachelor's degree from Hamilton College.

Timothy Rebhorn was appointed Executive Vice President, Corporate Development & Strategic Marketing in February 2016. In this role, he is responsible for managing relationships with key global account customers, global competitive analysis and market strategies, and leading corporate development activities such as mergers and acquisitions and joint ventures. Mr. Rebhorn joined First Solar in December 2012 as Senior Vice President, Sales – Americas and also served as Senior Vice President, Corporate Development & Strategic Marketing. His 30-year career in the energy industry includes leadership roles in the global natural gas and power generation markets. His efforts have been focused on developing, financing, and operating utility-scale energy projects and large infrastructure projects in water and steel. Prior to joining First Solar, he was CEO of Quail Nuclear Specialty Services, an industrial construction company. His previous experience includes executive leadership of Resolutions Management and Merrill International, which provided high-level consulting for clients in the energy, steel, engineering, and construction industries. With an emphasis on international infrastructure, Mr. Rebhorn led a "development SWAT Team" that explored and developed energy projects outside the traditional models of power plants and pipelines, conducted market entry analysis for large energy clients, and led cross-functional teams in the workout of Enron's international pipeline and power plant portfolio. Mr. Rebhorn began his career in the United States Navy, where he served as a Certified Nuclear Engineer in the Naval Nuclear Propulsion program (USS Parche SSN-683 nuclear submarine) and as a NATO staff planning officer. Mr. Rebhorn is a graduate of the U.S. Naval Academy and earned a Masters in Business Administration from Texas A&M University.

Christopher R. Bueter was appointed Executive Vice President, Human Resources in February 2016. Mr. Bueter joined First Solar in November 2009 as Global Director for Industrial Relations and also served as Vice President, Human Resources Global Business Development and Corporate Services, Vice President, Global Human Resources and Labor Relations, and Senior Vice President, Human Resources. Prior to joining First Solar, Mr. Bueter served as the Vice President of Global Employee Relations at Dana Corporation, an American-based worldwide supplier of powertrain components. In his 24 years at Dana Corporation, he served in a variety of roles, including Corporate

Director of Employee Relations and Distribution Services Division Human Resources Manager. Mr. Bueter holds a Bachelor of Science in human resources management from the University of Toledo, and a juris doctor degree from the University of Toledo Law School.

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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.

Risks Related to Our Markets and Customers

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

The significant decline in PV module prices over the last several years continues to create a challenging environment for module manufacturers, but it has also increased interest in solar electricity worldwide by eroding one of the primary historical constraints to widespread solar market penetration, namely its affordability. Aided by such lower module prices, competitors have in many cases been willing and able to bid aggressively for new projects and PPAs, using low cost assumptions for modules, BoS components, installation, maintenance, and other costs as the basis for such bids. Relatively low barriers to entry for competitors have led to, depending on the market and other factors, intense competition at the systems level. Intense competition at the systems level can result in an environment in which systems level pricing falls rapidly, thereby further increasing demand for solar solutions but constraining the ability for project developers, EPC companies, and/or vertically-integrated solar companies such as First Solar to sustain meaningful and consistent profitability. Accordingly, while we believe our systems 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 systems projects worldwide at economically attractive rates of return, and we may not otherwise be able to achieve meaningful profitability under our Long Term Strategic Plan.

Depending on the market opportunity, we may be at a disadvantage compared to potential systems-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, large-scale solar systems are still in their relatively early stages of existence, and, 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 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, from the viewpoint of our potential customer base, our business, financial condition, and results of operations could be adversely affected.

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, solar manufacturers have, relative to global demand, significant installed production capacity 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 put pressure on pricing. During the past several years, industry average sales prices per watt ("ASPs") have declined, at times significantly, both at the module and system levels, as competitors have reduced ASPs to sell-through inventories worldwide. 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 technology is not suitable for widespread adoption at economically attractive rates of return or if sufficient additional demand for solar modules 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 fossil fuel-based electricity generation, the solar energy market is at a relatively early stage of development. If PV technology proves unsuitable for widespread 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

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our business or generate sufficient net sales to sustain profitability. In addition, demand for solar modules and systems in our targeted markets may develop to a lesser extent than we anticipate. Many factors may affect the viability of widespread adoption of PV technology and demand for solar modules and systems, including the following:

- cost-effectiveness of the electricity generated by PV solar power systems compared to conventional energy sources, such as natural gas and coal (which fuel sources may be subject to significant price fluctuations from time to time), and other non-solar renewable energy sources, such as wind;
- 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;
- success of other renewable energy generation technologies, such as hydroelectric, tidal, wind, geothermal, and biomass;
- fluctuations in economic and market conditions that affect the price of, and demand for, conventional and non-solar renewable energy sources, such as increases or decreases in the prices of natural gas, coal, oil, and other fossil fuels;
- fluctuations in capital expenditures by end-users of solar modules and systems which tend to decrease when the economy slows and when interest rates increase; and
- availability, substance, and magnitude of support programs including government targets, subsidies, incentives, and renewable portfolio standards to accelerate the development of the solar industry.

The reduction, elimination, or expiration of government subsidies, economic incentives, renewable energy targets, and other support for on-grid solar electricity applications, or an increase in protectionist or other adverse public policies, could reduce demand and/or price levels for our solar modules and limit our growth or lead to a reduction in our net sales, thereby adversely impacting our operating results.

Although our Long Term Strategic Plan provides for First Solar to transition over time toward operating in key geographic markets that do not require solar-specific government subsidies or support programs, and we believe that solar will experience widespread adoption in those applications where it competes economically with traditional forms of energy without any support programs, in the near-term our net sales and profit 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, systems integrators, and manufacturers of PV products. Many of these support programs expire, phase out over time, require renewal by the applicable authority, or may be amended. A summary of recent developments in the major government support programs that can 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, or free-field or conversion land applications are disadvantaged, such changes could reduce 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 which proscribe or restrict the siting of utility-scale solar facilities could adversely affect the marginal cost of such development. These examples show that established markets for PV solar development, such as the U.S. market, face uncertainties arising from policy, regulatory, and governmental constraints. While the expected potential of the emerging markets we are targeting is significant, policy promulgation and market development are especially vulnerable to governmental inertia, political instability, geopolitical risk, fossil fuel subsidization, potentially stringent localization requirements, and limited

available infrastructure.

We could be adversely affected by any violations of the U.S. Foreign Corrupt Practices Act ("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 of their country of origin. Our policies mandate compliance with all applicable anti-bribery laws. We currently operate in, and pursuant to our Long Term Strategic Plan 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 operation in certain jurisdictions, including India, China, South America, and the Middle East, requires substantial government

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contact where norms can differ from U.S. standards. Although we have implemented policies and procedures designed to facilitate compliance with these anti-bribery laws, our officers, directors, associates, subcontractors, agents, and partners (such as joint venture partners) may take actions in violation of our policies 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, which could have a material adverse effect on our business, financial condition, cash flows, and reputation.

We may be unable to fully execute on our Long Term Strategic Plan, 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 Plan, particularly in new foreign jurisdictions, including the following:

- difficulty in accurately prioritizing geographic markets which we can most effectively and profitably serve with our PV offerings, including miscalculations in overestimating or underestimating the addressable market demand;
- difficulty in overcoming the inertia involved in changing local electricity ecosystems as necessary to accommodate large-scale PV solar deployment and integration;
- protectionist or other adverse public policies in countries we operate in and/or are pursuing, including local content requirements 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;
- the possibility of having insufficient capital resources necessary to achieve an effective localized business presence in targeted jurisdictions;
- difficulty in maintaining proper controls and procedures as we expand our business operations both in terms of complexity and 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 accuracy;
- 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 against companies who may gain in profitability and financial strength over time by successfully 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 the right local partners and developing any necessary partnerships with local businesses on commercially acceptable terms; and

- difficulty in balancing market demand and manufacturing production in an efficient and timely manner, potentially causing us to be manufacturing capacity constrained in some future periods or over-supplied in others.

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In addition, please see the Risk Factors entitled “Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in foreign countries,” and “The reduction, elimination, or expiration of government subsidies, economic incentives, renewable energy targets, and other support for on-grid solar electricity applications, or an increase in protectionist or other adverse public policies, could reduce demand and/or price levels for our solar modules and limit our growth or lead to a reduction in our net sales, thereby adversely impacting our operating results.”

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 rooftop 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.

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 PV modules.

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. In addition, we believe that a significant percentage of our end-users 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 end-users to seek alternative investments.

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 products or systems, which may significantly reduce demand for our solar modules, systems, or services.

The market for electricity generation products is heavily influenced by foreign, federal, state, and local 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 technical 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 products and investment in the research and development of PV technology. For example, without a

mandated regulatory exception for PV solar power systems, utility customers are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid. If these interconnection standby fees were applicable to PV solar power systems, it is likely that they would increase the cost of using such systems for end-users, 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 achieve lower prices in order to compete with the price of electricity from other sources and would adversely impact our operating results.

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Our modules, systems, and services (such as O&M) are 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 solar 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 solar modules, systems, or services. In addition, any regulatory compliance failure could result in significant management distraction, unplanned costs, and/or reputational damage.

Environmental obligations and liabilities could have a substantial negative impact on our financial condition, cash flows, and profitability.

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 execute our Long Term Strategic Plan and 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 subjected to substantial fines, penalties, criminal proceedings, third-party property damage or personal injury claims, cleanup costs, or other costs. Such solutions could also result in substantial delay or termination of projects under construction within our systems business, which could adversely impact our results of operations. 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 CdTe solar modules contain cadmium telluride 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 cadmium telluride are not believed to be as serious as those relating to exposure to elemental cadmium. In our manufacturing operations, we maintain engineering controls to minimize our associates' exposure to cadmium or 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 review 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 in electrical and electronic equipment (recast 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 modules are explicitly excluded from the scope of recast 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. A scope review focusing on additional exclusions is expected to be proposed by the European Commission in 2016 under the European Union's co-decision process which allows the European Parliament and the European Council to amend the European Commission's proposal on exclusions. The co-decision procedure is expected to be completed in 2017 or 2018. 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 European Union. As this would be impractical, such an event would effectively close the European Union market to us, which could have a material adverse effect on our business, financial condition, and results of operations.

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As an owner and operator of PV solar power systems that deliver electricity to the grid, certain of our affiliated entities may be regulated as public utilities under U.S. federal and state law, which could adversely affect the cost of doing business and limit our growth.

As an owner and operator of PV solar power systems that deliver electricity to the grid, certain of our affiliated entities may be considered public utilities for purposes of the Federal Power Act, as amended (the "FPA") and public utility companies for purposes of the Public Utility Holding Company Act of 2005 ("PUHCA 2005"), and are subject to regulation by the FERC, as well as various local and state regulatory bodies.

Some of our affiliated entities may be exempt wholesale generators or qualifying facilities under the Public Utility Regulatory Policies Act of 1978, as amended ("PURPA") and as such are exempt from regulation under PUHCA 2005. In addition, our affiliated entities may be exempt from most provisions of the FPA, as well as state laws regarding the financial or organizational regulation of public utilities. We are not directly subject to FERC regulation under the FPA. However, we are considered to be a "holding company" for purposes of Section 203 of the FPA, which regulates certain transactions involving public utilities, and such regulation could adversely affect our ability to grow the business through acquisitions. Likewise, investors seeking to acquire our public utility subsidiaries or acquire ownership interests in our securities sufficient to give them control over us and our public utility subsidiaries may require prior FERC approval to do so. Such approval could result in transaction delays or uncertainties.

Public utilities under the FPA are required to obtain FERC acceptance of their rate schedules for wholesale sales of electricity and to comply with various regulations. The FERC may grant our affiliated entities the authority to sell electricity at market-based rates and may also grant them certain regulatory waivers, such as waivers from compliance with FERC's accounting regulations. These FERC orders reserve the right to revoke or revise market-based sales authority if the FERC subsequently determines that our affiliated entities can exercise market power in the sale of generation products, the provision of transmission services, or if it finds that any of the entities can create barriers to entry by competitors. In addition, if the entities fail to comply with certain reporting obligations, the FERC may revoke their power sales tariffs. Finally, if the entities were deemed to have engaged in manipulative or deceptive practices concerning their power sales transactions, they would be subject to potential fines, disgorgement of profits, and/or suspension or revocation of their market-based rate authority. If our affiliated entities were to lose their market-based rate authority, such companies would be required to obtain the FERC's acceptance of a cost-of-service rate schedule and could become subject to the accounting, record-keeping, and reporting requirements that are imposed on utilities with cost-based rate schedules, which would impose cost and compliance burdens on us and have an adverse effect on our results of operations. In addition to the risks described above, we may be subject to additional regulatory regimes at state or foreign levels to the extent we own and operate PV solar power systems in such jurisdictions.

Risks Related to our Operations, Manufacturing, and Technology

Our operating history to date may not serve as an adequate basis to judge our future prospects and results of operations.

Our historical operating results may not provide a meaningful basis for evaluating our business, financial performance, and prospects. We may be unable to achieve similar growth, or grow at all, in future periods. Our ability to achieve similar growth in future periods is also affected by current economic conditions. Our past results occurred in an environment where, among other things, capital was at times more accessible to our customers to finance the cost of developing solar projects and economic incentives for solar power in certain markets were more favorable. Accordingly, you should not rely on our results of operations for any prior period as an indication of our future performance.

We face intense competition from manufacturers of crystalline silicon solar modules, as well as other thin-film solar modules; if global supply exceeds global demand, it could lead to a reduction in the average selling price for PV 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 competition from crystalline silicon solar module manufacturers and other thin-film solar module manufacturers. Existing or future solar manufacturers might be acquired by larger companies with significant capital resources, thereby intensifying competition with us. In addition, the introduction of a low cost disruptive technology, such as commercially viable energy storage, 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 solar module manufacturers, particularly manufacturers of crystalline silicon solar modules, has created and may continue to cause periods of structural imbalance in which supply exceeds demand. See the Risk Factor entitled “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

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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 would reduce the manufacturing cost of crystalline silicon solar modules and lead to further pricing pressure for solar modules and potentially the oversupply of solar modules.

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. 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. Also, we may decide to lower our average selling price to certain customers in certain markets in response to competition.

Problems with product quality or performance may cause us to incur significant and/or unexpected 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 conditions upon which we base our assessments and warranty of module performance over the duration of the warranty. However, if our thin-film or high-efficiency crystalline solar modules perform below expectations, we could experience significant warranty and related expenses, damage to our market reputation, and erosion of 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 10 years following the transfer of title to our modules. We also typically warrant that modules installed in accordance with agreed-upon specifications will produce at least 97% of their labeled power output rating during the first year, with the warranty coverage reducing by 0.7% every year thereafter throughout the 25-year performance warranty period. As an alternative form of our module power output warranty, we also offer an aggregated or system level module performance warranty. This system level module performance warranty is designed for utility-scale systems and also provides 25-year system level energy degradation protection. The system level module performance warranty typically is 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 programs, we bear a defined level of 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 our warranties, could adversely impact our business reputation, financial position, operating results, and cash flows.

Although our module performance warranties extend for 25 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 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 conversion efficiencies as part of our Long Term Strategic Plan. In addition, as 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, 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 related to defective modules, we have the option to repair or replace the covered modules, provide additional modules, or make a cash payment equal to the current market price of the modules; 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 business reputation, financial position, operating results, and cash flows.

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In addition to our solar module warranties, we also provide warranties for our BoS equipment, including, but not limited to, mounting structures, solar trackers, electronics, and cabling. These warranties cover defects in materials and workmanship for one to five years for most equipment and up to 10 years for mounting structures. As with our modules, these warranties are based on a variety of quality and life tests that enable predictions of durability and future performance. For PV solar power systems we construct, we also typically provide a limited warranty against defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a system. Any failures in BoS equipment or system construction beyond our expectations may also adversely impact our business reputation, financial position, operating results, and cash flows.

As part of our systems business, we may provide an energy performance test during the first year of a system's operation. Such a test is designed to demonstrate that the actual energy generation for the first 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 the quality, design, or construction. If there is an underperformance event, determined at the end of the first year after substantial completion, we may incur liquidated damages as a percentage of the contract price.

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

We have pre-funded, and may need to continue to pre-fund, our estimated future costs for collecting and recycling CdTe solar modules covered by our collection and recycling program. We estimate these costs based on the present value of the expected probability weighted future costs of collecting and recycling the modules, which includes estimates for the cost of packaging materials, the cost of freight from the solar module installation sites to a recycling center, the material, labor, capital costs, and scale of recycling centers, and an estimated third-party profit margin and return on risk for collection and recycling services. We base these estimates on (i) our experience collecting and recycling our solar modules, (ii) the expected timing of when our solar modules will be returned for recycling, and (iii) expected economic conditions at the time the solar modules will be collected and recycled. If our estimates prove incorrect, we could be required to accrue additional expenses at and from the time we realize our estimates are incorrect 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 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 research and development 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, research and development activities are inherently uncertain, and we could encounter practical difficulties in commercializing our research results. We seek to continuously improve our products and processes, and the resulting changes carry potential risks in the form of delays, additional costs, or other unintended contingencies. In addition, our significant expenditures on research and development 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, copper indium gallium diselenide, and amorphous silicon thin films, 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 system 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 conversion efficiency roadmap and long-term manufacturing cost, BoS cost and LCOE reduction objectives could adversely affect our operating results.

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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 inventions arising from our research and development, 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 upon 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. Also, litigation may be necessary to enforce our intellectual property rights, protect our trade secrets, or determine the validity and scope of the proprietary rights of others. We cannot ensure that the outcome of such potential litigation will be in our favor. 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.

Some of our key raw materials and components are either single-sourced or sourced from a limited number of third-party 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 cost. Some of our key raw materials and components are either single-sourced or sourced from a limited number of third-party suppliers. As a result, the failure of any of our suppliers to perform could disrupt our supply chain and impair our operations. In addition, some of our suppliers are small companies that may be unable to supply our increasing demand for raw materials and components as we continue to 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 cause us to be unable to meet our capacity plans and/or our obligations under our customer contracts, which would have an adverse impact on our business.

A disruption in our supply chain for cadmium telluride 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 we use in our CdTe module production process is a cadmium telluride compound. Tellurium, one of the main components of cadmium telluride, is mainly produced as a by-product of copper refining, and therefore, its supply is largely dependent upon demand for copper. Our supply of cadmium telluride could be limited if any of our current suppliers or any of our future suppliers are unable to acquire an adequate supply of tellurium in a timely manner or at commercially reasonable prices. If our competitors begin to use or increase their demand for cadmium telluride, supply could be reduced and prices could increase. 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. We may be unable to pass increases in the costs of our raw materials through to our customers. A substantial increase in tellurium prices could adversely impact our profitability and long-term growth objectives.

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Our TetraSun module offering may not be able to achieve profitable commercial scale, which could adversely impact our operating results and our future growth objectives with respect to PV solar in restricted spaces.

In 2013, we acquired TetraSun, Inc., a development stage company with high-efficiency crystalline silicon technology. We expect our high-power density TetraSun modules to offer advantages relative to our CdTe modules in certain commercial & industrial, rooftop, and other space constrained applications. Although we began manufacturing TetraSun modules during the fourth quarter of 2014, we have less experience with crystalline silicon module manufacturing compared to many of our competitors, and accordingly we face numerous risks and uncertainties. Many of these risks are inherent in PV module manufacturing generally, or otherwise similar to risks involved in our CdTe PV module manufacturing operations, and are discussed elsewhere in Item 1A: “Risk Factors.”

Additionally, scaling of high-volume TetraSun module manufacturing could present supply chain, timing, and other challenges. Contrasted with our largely automated CdTe manufacturing lines, our TetraSun module manufacturing operations involve a batch process and are not fully integrated from initial feedstock to final module, potentially resulting in timing, cost, supply, and other constraints. We outsource module assembly to a third party, and any constraints such party faces in meeting our volume or quality requirements would negatively impact our ability to deliver modules to our customers. TetraSun cells are manufactured using n-type mono-crystalline wafers. We rely on our wafer suppliers to contract polysilicon feedstock in sufficient volumes to meet our demand. Market-driven increases in polysilicon prices realized by our wafer suppliers or increases in wafer prices generally would increase our manufacturing costs and negatively impact margins on TetraSun modules.

If we are able to achieve high-volume manufacturing of TetraSun modules, we may not have an adequate sales channel for such modules and/or the prevailing average selling price or conversion efficiency of PV modules in general may have changed in such a manner as to make our TetraSun modules uncompetitive. If our TetraSun modules are unable to achieve profitable commercial scale, we may have to write down all or a portion of the assets related to this business area, and our future growth strategy with respect to PV solar in restricted spaces could be adversely impacted, which could have an adverse effect on our business, financial condition, and results of operations.

Our future success depends on our ability to effectively balance manufacturing production with market demand and, when necessary, continue to build new manufacturing plants over time in response to such demand and add production lines in a cost-effective manner, all of which are subject to risks and uncertainties.

Our future success depends on our ability to effectively balance manufacturing production with market demand and increase both our manufacturing capacity and production throughput over time in a cost-effective and efficient manner. If we cannot do so, we may be unable to expand our business, decrease our manufacturing cost per watt, maintain our competitive position, satisfy our contractual obligations, or sustain profitability. See “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.” Our ability to expand production capacity is subject to significant risks and uncertainties, including the following:

- 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;

- being unable to hire qualified staff;

- failure to execute our expansion plans effectively;

- manufacturing concentration risk resulting from a majority of our production lines worldwide being located in one geographic area, Malaysia, and the possible inability to meet customer demand in the event of compromises to shipping processes, supply chain, or other aspects of such facility;

- difficulty in balancing market demand and manufacturing production in an efficient and timely manner, potentially causing us to be manufacturing capacity 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, or shut down manufacturing capacity.

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If any future production lines are not built in line with our committed schedules it may impair any 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 as necessary over time and achieve and sustain similar operating metrics in our future production lines as we have achieved at 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 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.

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 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 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 plans, otherwise disrupt our production schedule, and/or increase our manufacturing costs, all of which would adversely impact our operating results.

We may be unable to manage the expansion of our operations effectively.

We expect to continue to expand our business in order to provide utility-scale PV generation to existing and new geographic markets and to maintain or increase market share. To manage the continued expansion of our operations, we will be required to continue to improve our operational and financial systems, procedures and controls, and expand, train, manage, and retain our growing associate base. Our management will also be required to maintain and expand our relationships with customers, suppliers, and other third parties and attract new customers and suppliers. In addition, our current and planned operations, personnel, systems, and internal controls and procedures might be inadequate to support our future growth. The effectiveness of our controls and procedures could be adversely impacted to the extent we transfer more business functions to lower cost geographies as part of our cost reduction initiatives. If we cannot manage our growth effectively, we may be unable to take advantage of market opportunities, execute our business strategies, or respond to competitive pressures.

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

We have significant marketing, distribution, and manufacturing operations both within and outside the United States and expect to continue to expand our operations worldwide. As a result, we will be 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;
-

difficulty in forming appropriate legal entities to conduct business in foreign countries in the required time frame and the associated costs of forming those legal entities;

- 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 these 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 flow in U.S. dollars to the extent that our equity investments, 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;

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- anti-corruption compliance issues, including the costs related to the mitigation of such risk;
- inability to obtain, maintain, or enforce intellectual property rights;
- 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 foreign laws or regulatory requirements, including those with respect to environmental protection, 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; 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 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 power electric 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, 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;

- receipt from governmental agencies of required environmental, land-use, and construction permits and approvals;

- 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;

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- negotiation of satisfactory EPC agreements;
- entering into financeable arrangements for the purchase of the electrical output and renewable energy attributes generated by the project;
- 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 construction 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); 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 materials supply shortages 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 transmission grid congestion issues;

- 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 U.S. Foreign Corrupt Practices Act and applicable local laws and customs;

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- unfavorable tax treatment;
- adverse weather conditions;
- water shortages;
- adverse environmental and geological conditions; and
- force majeure and other events out of our control.

If we fail to complete the development of a solar power 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. Some of these investments are included as assets on our consolidated balance sheets under the line item "Project assets and deferred project costs." If we are unable to complete the development of a solar power project, we may write-down or write-off 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 accurately estimate costs under fixed-price EPC agreements in which we act as the general contractor for our customers in connection with the construction and installation of their PV solar power systems.

We may enter into fixed-price EPC contracts in which we act as the general contractor for our customers in connection with the installation of their PV solar power systems. All essential costs are estimated at the time of entering into the EPC contract for a particular project, and these are reflected in the overall fixed-price that we charge our customers for the project. These cost estimates are preliminary and may or may not be covered by contracts between us or the subcontractors, suppliers, and other parties to the project. In addition, we require qualified, licensed subcontractors to install many of our systems. Shortages of such skilled labor could significantly delay a project or otherwise increase our costs. Should actual results prove different from our estimates (including those due to unexpected increases in inflation, commodity prices, or labor costs) or we experience delays in execution and we are unable to commensurately increase the EPC sales price, we may not achieve our expected margins or we may be required to record a loss in the relevant fiscal period.

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, and obtain all necessary local, county, state, federal, 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 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 PV solar power systems 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. The

authorization for the use, construction, and operation of systems and associated transmission facilities on federal, state, 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, potentially, any excessive delays in obtaining such permits due, for example, to litigation or third-party appeals, could prevent us from successfully constructing and operating PV solar power 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.

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In addition, local labor unions may increase the cost of, and/or lower the productivity 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.

Lack of transmission capacity availability, potential upgrade costs to the transmission grid, and other systems 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. These transmission issues, as well as issues relating to the availability of large equipment such as transformers and switch gear, could significantly impact our ability to build such systems and generate solar electricity sales.

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 is expected in many cases to require project financing, including non-recourse project debt financing in the bank loan market and institutional debt capital markets. Uncertainties exist as to whether our projects will be able to access the debt markets in a magnitude sufficient to finance their construction. If we 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 plan. In addition, we generally expect to sell 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 our projects may be delayed or limited, and our business, financial condition, and results of operations may be adversely affected. Even if such financing sources are available, the counterparty to many of our fixed-price EPC contracts, which own the project we are constructing, are often special purpose vehicles that do not have significant assets other than their interests in the project and have pledged all or substantially all of these assets to secure the project-related debt and certain other sources of financing. If the owner defaults on its payments or other obligations to us, we may face difficulties in collecting payment of amounts due to us for the costs previously incurred or for the amounts previously expended or committed to be expended to purchase equipment or supplies (including intercompany purchases of PV modules), or for termination payments we are entitled to under the terms of the related EPC contract. If we are unable to collect the amounts owed to us, or are unable to complete the project because of an owner default, we may be required to record a charge against earnings related to the project, which could result in a material loss.

In addition, for projects to which we provide EPC services but are not the project developer, our EPC activities are in many cases dependent on the ability of third parties to finance their systems projects, which, in turn, is dependent on their ability to obtain financing for such purchases on acceptable terms. 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 PV solar power 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 PV modules.”

Developing solar power projects may require significant upfront investment prior to the signing of an EPC contract and commencing construction, which could adversely affect our business and results of operations.

Our solar power project development cycles, which span the time between the identification of land and the commercial operation of a PV solar power system, vary substantially and can take many months or years to mature. As a result of these long project cycles, we may need to make significant upfront 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 EPC contracts, commencing construction, receiving cash proceeds, and recognizing any revenue, which may not be recognized for several additional months or years following contract signing. Our potential inability to enter into sales contracts with potential 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.

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

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. Further, other sources of power, such as natural gas-fired power plants, have historically been cheaper than the cost of solar power, and power from certain types of projects, such as natural gas-fired power plants, can be delivered on a firm basis. The 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 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. Also, 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 will 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.

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

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. We have limited experience in performing O&M services in certain jurisdictions outside of the United States, Canada, and Australia where we plan to offer PV systems solutions as part of our Long Term Strategic Plan, including estimating actual costs for such jurisdictions under our O&M agreements relative to the price that we charge our customers. Should our estimates of O&M costs prove inaccurate (including any unexpected increases in inflation or 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, particularly if our costs are not capped under the terms of the agreements. 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.

Our systems business is subject to regulatory oversight and liability if we fail to operate our 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,” or “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," or "GOs" 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. Finally, as a systems owner and operator, we may in the future be subject to regulation by NERC as a GO.

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Other Risks

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

We have made several acquisitions in the last several years and in the future we may acquire additional companies, project pipelines, products, or technologies or enter into joint ventures or other strategic initiatives. We may not realize the anticipated benefits of a business combination, and each transaction has numerous risks. These risks 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;
- 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.

We may not be able to achieve the full strategic and financial benefits expected to result from the formation of 8point3 Energy Partners LP, on a timely basis or at all.

In June 2015, 8point3 Energy Partners LP (the "YieldCo" or the "Partnership"), a limited partnership formed by First Solar and SunPower Corporation ("SunPower"), completed its initial public offering. The YieldCo is a joint venture vehicle into which we and SunPower each contributed a portfolio of selected solar generation assets from our existing portfolios of assets. We launched the YieldCo to enable a competitive cost of capital and greater optionality in the project sales process for a portion of our future project sales. Given the broader economic factors currently impacting the yieldco sector in general, including yieldco equity valuations generally, the timing and execution of asset drop downs to the YieldCo are subject to market conditions. We believe

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that the viability of the YieldCo strategy will depend on, among other things, such market conditions and our ability to continue to develop revenue-generating solar assets, which is subject to the same project-level, business, and industry risks described in the other Risk Factors contained in this Annual Report on Form 10-K. The viability of the YieldCo strategy is also subject to the risks described in the YieldCo's Annual Report on Form 10-K. In addition, due to the joint venture nature of the YieldCo, we do not exercise control over the YieldCo in the same manner that we could over our wholly-owned subsidiaries, and, as such, the viability of the YieldCo strategy will also depend in part on our ability to effectively manage our business relationships with SunPower. Furthermore, the value of our investment in the YieldCo will fluctuate over time and may decline. As a result, we may never recover the value of the assets we contributed to the YieldCo, and we may realize less of a return on such contributions than if we had retained or operated the assets. In addition, our stock price may be impacted by fluctuations in the price of YieldCo shares and market perceptions about the value of our interest in the YieldCo. If we are unable to achieve the strategic and financial benefits expected to result from the YieldCo strategy, we would pursue traditional and other pathways in the project sales process, but our business, financial condition, and results of operations could be materially adversely affected. See Note 12 "Investments in Unconsolidated Affiliates and Joint Ventures" to our consolidated financial statements included in this Annual Report on Form 10-K.

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 we 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 and the enforceability of the non-competition provisions in certain jurisdictions is uncertain.

If we are unable to attract, train, and retain key personnel, our business may be materially and adversely affected; any regulatory compliance failure with respect to applicable labor laws and regulations, including the Davis-Bacon and Related Acts, could have an adverse effect on us.

Our future success depends, to a significant extent, on our ability to attract, train, and retain management, operations, sales, training, and technical personnel, including in foreign jurisdictions as we continue to execute on our Long Term Strategic Plan. Recruiting and retaining capable personnel, particularly those with expertise in the PV 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.

Labor used on some of our job sites that are completed or under construction are subject to the Davis-Bacon and Related Acts (collectively, "Davis-Bacon"). Davis-Bacon requires that personnel assigned to the project be paid at least the prevailing wage and fringe benefits, as established by and in accordance with the regulations promulgated by the U.S. Department of Labor ("DOL"). We have an established policy pursuant to which we evaluate Davis-Bacon requirements in conjunction with our subcontractors on the project and ensure our collective compliance with these requirements. If it was ultimately determined that any person working under Davis-Bacon requirements on First Solar projects was not properly classified, was being paid the incorrect prevailing wage, or had not been paid fringe benefits to which he or she was entitled, we could incur additional liability with respect to such worker or be exposed to other adverse outcomes. For example, in March 2015, the Wage and Hour Division of the DOL notified our wholly-owned

subsidiary First Solar Electric, LLC ("FSE") of the DOL's findings following a labor standards compliance review under Davis-Bacon at our Agua Caliente project in southwestern Arizona. FSE served as the general contractor for the project. The DOL alleges that certain workers at the project were misclassified and, as a result of that misclassification, were not paid the required prevailing wage. We disagree with certain of the DOL's investigative findings and are reviewing those issues of disagreement with the DOL. Possible adverse outcomes include the payment of back wages and debarment of FSE and its affiliates from doing certain business with the U.S. federal government. We cannot predict the ultimate outcome of the DOL proceeding.

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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 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 our 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 2015 were denominated in foreign currencies, such as Australian dollars, Indian rupees, and Euros, and we expect more than a minor percentage of our net sales to be outside the United States and denominated in foreign currencies in the future. In addition, our operating expenses for our manufacturing plants located outside the U.S. and our operations for our systems business in foreign countries will generally be denominated in local currencies. Joint ventures or other business arrangements with strategic partners outside of the United States have involved, and are expected in the future to 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 exposure; and therefore, result in exchange gains or losses.

Sustained declines in worldwide oil prices could adversely affect trading prices of our common shares.

Worldwide oil prices have declined over the last few years and may continue to decline or remain low. Oil is used as a fuel for electricity generation in only a small percentage of applications worldwide, compared to natural gas or coal-fired electricity generation and other forms of electricity generation, and accordingly, fluctuations in oil prices generally do not have a significant direct causal effect on prevailing competitive electricity prices, including electricity from solar sources. Nonetheless, there can be an observed market correlation effect between declining oil

prices and depressed equity valuations of solar companies. If oil prices remain low or continue to decline, the trading price of our common shares may suffer.

Global sovereign debt issues could adversely impact our business.

Potential sovereign debt issues in Europe, emerging markets, and other regions and their impact on the balance sheets and lending practices of global banks in particular could negatively impact our access to, and cost of, capital and therefore could have an adverse effect on our business, financial condition, results of operations, and competitive position. It could also similarly affect our customers and therefore limit the sales of our modules and demand for our systems. Sovereign debt problems may also cause governments to reduce, eliminate, or allow to expire government subsidies and economic incentives for solar energy, which could limit our growth or cause our net sales to decline and materially and adversely affect our business, financial condition, and results of operations.

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

From time to time, we are subject to legal claims, with and without merit, that may be costly and which may divert the attention of our management and our resources in general. In addition, our projects may be subject to litigation or other adverse proceedings that may adversely impact our ability to proceed with construction or sell a given project, which would adversely affect our ability to recognize revenue with respect to such project. The results of complex legal proceedings are difficult to predict. Moreover, many of the complaints filed against us do not specify the amount of damages that plaintiffs seek, and we therefore are unable to estimate the possible range of damages that might be incurred should these lawsuits be resolved against us. Certain of these lawsuits assert types of claims that, if resolved against us, could give rise to substantial damages, and an unfavorable outcome or settlement of one or more of these lawsuits, or any future lawsuits, may result in a significant monetary judgment or award against us or a significant monetary payment by us, and could have a material adverse effect on our business, financial condition, or results of operations. Even if these lawsuits, or any future lawsuits, are not resolved against us, the costs of defending such lawsuits may be significant and may not be covered 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. For more information on our legal proceedings, including our securities class action and derivative actions, see “Note 16 “Commitments and Contingencies” under the heading “Legal Proceedings” of our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

Our largest stockholder has significant influence over us and its interests may conflict with or differ from interests of other stockholders.

Our largest stockholder, consisting collectively of JCL FSLR Holdings, LLC and its beneficiaries and JTW Trust No. 1 UAD 9/19/02 and its beneficiaries, each affiliated in the past with the former Estate of John T. Walton (collectively, the “Significant Stockholder”), owned approximately 26% of our outstanding common stock at December 31, 2015. As a result, the Significant Stockholder has substantial influence over all matters requiring stockholder approval, including the election of our directors and the approval of significant corporate transactions such as mergers, tender offers, and the sale of all or substantially all of our assets. The interests of the Significant Stockholder could conflict with or differ from interests of other stockholders. For example, the concentration of ownership held by the Significant Stockholder could delay, defer or prevent a change of control of our company or impede a merger, takeover, or other business combination, which other stockholders may view favorably.

If our goodwill and other intangible assets or project related assets become impaired, we may be required to record a significant charge to earnings.

We may be required to record a significant charge to earnings in our financial statements should we determine that our goodwill, other intangible assets, or project assets are impaired. Such a charge might have a significant impact on our financial position and results of operations.

As required by accounting rules, we review our goodwill for impairment at least annually in the fourth quarter or more frequently 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. Factors that may be considered a change in circumstances indicating that the carrying value of our goodwill might not be recoverable include a significant decline in our stock price and market capitalization, a significant decline in projections of future cash flows, and lower future growth rates in our industry.

We review project related assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. We consider a project commercially viable and recoverable if it is

anticipated to be sellable for a profit once it is either fully developed or 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.

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

We are subject to income taxes in the United States and the foreign jurisdictions in which we operate. Our tax liabilities are affected by the amounts we charge for inventory, services, licenses, funding, and other intercompany transactions. We are subject to potential tax examinations in these various jurisdictions. Tax authorities may disagree with our intercompany charges, cross-jurisdictional transfer pricing or other tax positions and assess additional taxes. We regularly assess the likely outcomes of these examinations in order to determine the appropriateness of our tax provision. However, there can be no assurance that we will accurately predict the outcomes of these potential examinations, and the amounts ultimately paid upon resolution of examinations

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could be materially different from the amounts previously included in our income tax provision and, therefore, 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, a loss of our Malaysian tax holiday, changes in the mix of earnings in 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. A number of proposals for broad reform of the corporate tax system in the U.S. are under evaluation by various legislative and administrative bodies, but it is not possible to accurately determine the overall impact of such proposals on our effective tax rate at this time. Changes in tax laws or regulations, including multijurisdictional changes enacted in response to the guidelines provided by the Organization for Economic Co-operation and Development to address base erosion and profit sharing, may increase tax uncertainty and adversely affect our 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 financial condition and results of operations.

Our operations rely on our computer systems, hardware, software, and networks, as well as those of the third parties with which we do business, to securely process, store, and transmit proprietary, confidential, and other information, including intellectual property. Such information systems may be compromised by cyber attacks, computer viruses, and other events that 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, construction, O&M, and other operations may be disrupted, and our reputation may suffer. 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 financial condition and results of operations.

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. For example, the Court of Justice of the European Union recently ruled that the U.S.-EU Safe Harbor framework, which provided U.S. companies with a streamlined means of complying with the European Union's Data Protection Directive regarding the treatment of customers' and employees' personal information and other privacy matters, and upon which we relied for the transfer of personal data from the EU to the U.S., was invalid. 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. Industry organizations also regularly adopt and advocate for new standards in this area. In the United States, these include rules and regulations promulgated under the authority of federal agencies and state attorneys general and 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 or our customers must comply, including but not limited to, the Data Protection Directive established in the European Union and data protection legislation of the individual member states subject to such directive. The Data Protection Directive may be replaced in time with the pending European General Data Protection Regulation, which may impose additional obligations and risk upon our business. 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. 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 cost and liability to us, damage our reputation, inhibit sales, and adversely affect our business.

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 our Revolving Credit Facility, our Malaysian credit facility agreements, 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;

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- sell certain assets; and

- declare or pay dividends, make other distributions to stockholders, or make other restricted payments.

Under our Revolving Credit Facility, our Malaysian credit facility agreements, 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, 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 other facility 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, we cannot assure you that events that occur within the Company, or in the industry or the economy as a whole, will not 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 loan balances. If any of our debt is accelerated, we may in the future not have sufficient funds available to repay such debt, and we may experience cross-defaults under our other debt agreements or project and key operational agreements, which could materially and negatively affect our business, financial condition, and results of operations.

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

As of December 31, 2015, our principal properties consisted of the following:

Nature	Primary Segment(s) Using Property	Location	Held	Major Encumbrances
Manufacturing Plant, Research and Development Facility, and Administrative Offices	Components	Perrysburg, Ohio, United States	Own	n/a
Manufacturing Plants and Administrative Offices	Components	Kulim, Kedah, Malaysia	Lease Land/Own Buildings	Malaysian Ringgit Facility Agreement (1)
Administrative Office	Components & Systems	Georgetown, Penang, Malaysia	Lease	n/a
Manufacturing Plants (2)	Components	Frankfurt/Oder, Germany	Own	n/a
Manufacturing Plant (3)	Components	Ho Chi Minh City, Vietnam	Lease Land/Own Building	n/a
Corporate Headquarters	Components & Systems	Tempe, Arizona, United States	Lease	n/a
Administrative Office		Houston, Texas, United States	Lease	n/a

	Components & Systems			
Administrative Office, Research and Development Facility	Systems	Bridgewater, New Jersey, United States	Lease	n/a
Administrative Office	Systems	San Francisco, California, United States	Lease	n/a
Research and Development Facility	Components & Systems	Santa Clara, California, United States	Lease	n/a
Administrative Office	Components & Systems			