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;

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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	Mainz, Germany	Lease	n/a
Administrative Office	Systems	New Delhi, India	Lease	n/a
Administrative Office	Systems	Sydney, Australia	Lease	n/a
Administrative Office	Systems	Dubai, United Arab Emirates	Lease	n/a
Administrative Office	Systems	Santiago, Chile	Lease	n/a
Administrative Office	Systems	Cape Town, South Africa	Lease	n/a
Administrative Office	Systems	Tokyo, Japan	Lease	n/a

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(1) See Note 15 “Debt” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information on property encumbrances.

(2) Manufacturing ceased in December 2012, and such property is being actively marketed for sale.

(3) We did not proceed with our previously announced four-line plant in Vietnam, and such property is being actively marketed for sale.

In addition, we lease small amounts of office and warehouse space in several other U.S. and international locations.

Item 3: Legal Proceedings

In the ordinary conduct of our business, we are subject to periodic lawsuits, investigations, and claims, including, but not limited to, routine employment matters. Although we cannot predict with certainty the ultimate resolution of lawsuits, investigations, and claims asserted against us, we do not believe that any currently pending legal proceeding to which we are a party will have a material adverse effect on our business, financial condition, results of operations, or cash flows.

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 for information regarding legal proceedings and related matters.

Item 4: Mine Safety Disclosures

None.

PART II

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

Price Range of Common Stock

Our common stock has been listed on The NASDAQ Global Select Market under the symbol “FSLR” since November 17, 2006. Prior to this time, there was no public market for our common stock. The following table sets forth the range of high and low closing prices per share as reported on The NASDAQ Global Select Market for the periods indicated.

	High	Low
Fiscal year 2015		
First quarter	$62.52	$39.83
Second quarter	$64.75	$46.98
Third quarter	$53.48	$40.81
Fourth quarter	$66.99	$42.68
Fiscal year 2014		
First quarter	$73.87	$47.73
Second quarter	$73.34	$58.63
Third quarter	$72.78	$61.45
Fourth quarter	$64.10	$40.90

The closing price of our common stock on The NASDAQ Global Select Market was $62.76 per share on February 19, 2016. As of February 19, 2016, there were 51 record holders of our common stock. This figure does not reflect the beneficial ownership of shares held in nominee names.

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Dividend Policy

We have never paid, and it is our present intention for the foreseeable future not to pay, dividends on our common stock. Our Revolving Credit Facility imposes restrictions on our ability to declare or pay dividends. The declaration and payment of dividends is subject to the discretion of our board of directors and depends on various factors, including the continued applicability of the above-referenced restrictions under our Revolving Credit Facility, our net income, financial condition, cash requirements, future prospects, and other factors deemed relevant by our board of directors.

Stock Price Performance Graph

The following graph compares the 5-year cumulative total return on our common stock relative to the cumulative total returns of the S&P 500 Index and the Guggenheim Solar ETF, which represents a peer group of solar companies. In the stock price performance graph included below, an investment of $100 (with reinvestment of all dividends) is assumed to have been made in our common stock, the S&P 500 Index, and the Guggenheim Solar ETF on December 31, 2010, and its relative performance is tracked through December 31, 2015. No cash dividends have been declared on shares of our common stock. This performance graph is not “soliciting material,” is not deemed filed with the SEC, and is not to be incorporated by reference in any filing by us under the Securities Act of 1933, as amended (the “Securities Act”), or the Exchange Act, whether made before or after the date hereof, and irrespective of any general incorporation language in any such filing. The stock price performance shown on the graph represents past performance and should not be considered an indication of future price performance.

* $100 invested on December 31, 2010 in stock or index, including reinvestment of dividends. Index calculated on a month-end basis.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliate Purchases

None.

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Item 6: Selected Financial Data

The following tables set forth our selected consolidated financial data for the periods and at the dates indicated. The selected consolidated financial data from the consolidated statements of operations and consolidated statements of cash flows for the years ended December 31, 2015, 2014, and 2013 and the selected consolidated financial data from the consolidated balance sheets for the years ended December 31, 2015 and 2014 have been derived from the audited consolidated financial statements included in this Annual Report on Form 10-K. The selected consolidated financial data from the consolidated balance sheets for the years ended December 31, 2013, 2012, and 2011 and selected consolidated financial data from the consolidated statements of operations and consolidated statements of cash flows for the years ended December 31, 2012 and 2011 have been derived from audited consolidated financial statements not included in this Annual Report on Form 10-K. We have revised our previously issued financial statements from 2011 to 2014 to properly record a liability associated with an uncertain tax position related to income of a foreign subsidiary. Additional revisions have been made for previously identified errors that were corrected in a period subsequent to the period in which the error originated. All financial information presented herein was revised to reflect the correction of these errors. See “Note 1. First Solar and Its Business – Revision of Previously Issued Financial Statements” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information. The information presented below should also be read in conjunction with Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes thereto.

	Years Ended				
	December 31, 2015	December 31, 2014	December 31, 2013	December 31, 2012 (2)	December 31, 2011 (3)
	(In thousands, except per share amounts)				
Net sales	$3,578,995	$ 3,391,187	$ 3,309,616	$ 3,354,920	$ 2,779,832
Gross profit	919,267	824,941	864,632	847,820	976,966
Operating income (loss)	516,664	421,999	370,407	(42,933)	(63,008)
Net income (loss)	$546,421	$ 395,964	$ 350,718	$ (106,909)	$ (61,648)
Net income (loss) per share:					
Basic	$5.42	$ 3.96	$ 3.74	$ (1.23)	$ (0.72)
Diluted	$5.37	$ 3.90	$ 3.67	$ (1.23)	$ (0.72)
Cash dividends declared per common share	$—	$ —	$ —	$ —	$ —
Net cash (used in) provided by operating activities	$(360,919)	$ 680,989	$ 856,126	$ 762,209	$ (33,463)
Net cash used in investing activities	(112,140)	(511,879)	(537,106)	(383,732)	(676,457)
Net cash provided by (used in) financing activities	137,103	7,359	101,164	(89,109)	571,218

	December 31, 2015	December 31, 2014	December 31, 2013 (1)	December 31, 2012 (2)	December 31, 2011 (3)
	(In thousands)				
Cash and cash equivalents	$1,126,826	$ 1,482,054	$ 1,325,072	$ 901,294	$ 605,619
Marketable securities, current and noncurrent	703,454	509,032	439,102	102,578	182,338
Total assets	7,316,331	6,720,991	6,876,586	6,356,975	5,782,339
Total long-term debt	289,415	213,473	223,323	562,572	663,648
Total liabilities	1,767,844	1,729,504	2,408,516	2,783,681	2,163,593
Total stockholders’ equity	5,548,487	4,991,487	4,468,070	3,573,294	3,618,746

(1) Includes adjustments for the revisions described above, which decreased total assets by $6.9 million, increased total liabilities by $28.1 million, and decreased total stockholders' equity by $35.0 million.

(2) Includes adjustments for the revisions described above, which decreased net sales by $13.6 million, decreased gross profit by $4.9 million, increased operating loss by $5.4 million, increased net loss by $10.6 million, increased total assets by $8.3 million, increased total liabilities by $40.5 million, and decreased total stockholders' equity by $32.2 million.

(3) Includes adjustments for the revisions described above, which increased net sales by $13.6 million, increased gross profit by $5.2 million, decreased operating loss by $5.6 million, increased net loss by $22.2 million, increased total assets by $4.7 million, increased total liabilities by $29.8 million, and decreased total stockholders' equity by $25.1 million.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the related notes thereto included in this Annual Report on Form 10-K. Unless expressly stated or the context otherwise requires, the terms "we," "our," "us," and "First Solar" refer to First Solar, Inc. and its subsidiaries. In addition to historical consolidated financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties, and assumptions as described under the "Note Regarding Forward-Looking Statements," that appears earlier in this Annual Report on Form 10-K. Our actual results could differ materially from those anticipated by these forward-looking statements as a result of many factors, including those discussed under Item 1A: "Risk Factors," and elsewhere in this Annual Report on Form 10-K.

Executive Overview

We are a leading global provider of comprehensive 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 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.

Certain highlights of our financial results and other key developments include the following:

- Net sales for 2015 increased by 6% to $3.6 billion compared to $3.4 billion in 2014. The increase in net sales was primarily attributable to higher revenue from module plus transactions. Our net sales for 2015 also included the sale of majority interests in the partially constructed Desert Stateline project and North Star project and higher revenue from our Silver State South, McCoy, and Imperial Solar Energy Center West projects, which commenced construction in late 2014. These 2015 net sales were offset by lower revenue from the completion, or substantial completion, of our Desert Sunlight, Solar Gen 2, Topaz, and Campo Verde projects in 2014.

- Gross profit increased 1.4 percentage points to 25.7% during 2015 from 24.3% during 2014, primarily due to a reduction in our module collection and recycling obligation and improved utilization of our manufacturing facilities.

- As of December 31, 2015, we had 30 installed production lines with an annual global manufacturing capacity of approximately 2.8 GW at our manufacturing facilities in Perrysburg, Ohio and Kulim, Malaysia. We produced 2.5 GW of solar modules during 2015, which represented a 39% increase from 2014. The increase in production was primarily driven by the restart of various production lines at our manufacturing facility in Malaysia, increased throughput, and higher module conversion efficiencies. We expect to produce approximately 3.0 GW of solar modules during 2016.

- During 2015, we ran our manufacturing facilities at approximately 92% capacity utilization, which represented an 11.0 percentage point increase from 2014.

- The average conversion efficiency of our modules produced in 2015 was 15.6%, which represented an improvement of 1.6 percentage points from our average conversion efficiency of 14.0% in 2014.

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Market Overview

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 system 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, 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 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.

Worldwide solar markets continue to develop, in part aided by 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. We are developing, constructing, or operating multiple solar projects around the world, many of which are the largest or among the largest in their regions. In North America, we continue to execute on our advanced-stage utility-scale project pipeline, which includes the construction of some of the world's largest PV solar power systems. We expect a substantial portion of our consolidated net sales, operating income, and cash flows through the end of 2016 to be derived from these projects. We continue to advance the development and selling efforts for the other projects included in our advanced-stage utility-scale project pipeline and also continue to develop our early-to-mid stage project pipeline and evaluate acquisitions of projects to continue to add to our advanced-stage utility-scale project pipeline.

Lower industry module and system pricing, while currently challenging for certain solar manufacturers (particularly manufacturers with high cost structures), is expected to continue to contribute to global market diversification and volume elasticity. Over time, declining average selling prices are consistent with the erosion of one of the primary historical constraints to widespread solar market penetration, its affordability. In the near term, however, declining average selling prices could adversely affect our results of operations. If competitors reduce pricing to levels below their costs, bid aggressively low prices for PPAs and EPC agreements, or are able to operate at negative or minimal operating margins for sustained periods of time, our results of operations could be further adversely affected. We continue to mitigate this uncertainty in part by executing on and building our advanced-stage utility-scale systems pipeline, executing on our module efficiency improvement and BoS cost reduction roadmaps, and continuing the development of key geographic markets.

We continue to face intense competition from manufacturers of crystalline silicon solar modules and other types of solar modules and PV solar power systems. Solar module manufacturers compete with one another in several product performance attributes, including conversion efficiency, energy density, reliability, and selling price per watt, and, with respect to PV solar power systems, net present value, return on equity, and LCOE, meaning the net present value of total life cycle costs of the PV solar power system divided by the quantity of energy which is expected to be produced over the system's life.

We believe we are among the lowest cost PV module manufacturers in the solar industry on a module cost per watt basis, based on publicly available information. This cost competitiveness is reflected in the price at which we sell our modules and fully integrated PV solar power systems and enables our systems to compete favorably. Our cost competitiveness is based in large part on our module conversion efficiency, proprietary manufacturing technology (which enables us to produce a CdTe module in less than 2.5 hours using a continuous and highly automated industrial

manufacturing process, as opposed to a batch process), our scale, and our operational excellence. In addition, our CdTe modules use approximately 1-2% of the amount of the semiconductor material that is used to manufacture traditional crystalline silicon solar modules. The cost of polysilicon is a significant driver of the manufacturing cost of crystalline silicon solar modules, and the timing and rate of change in the cost of silicon feedstock and polysilicon could lead to changes in solar module pricing levels. Polysilicon costs have had periods of decline over the past several years, contributing to a decline in our relative manufacturing cost competitiveness over traditional crystalline silicon module manufacturers. Given the smaller size (sometimes referred to as form factor) of our CdTe modules compared to certain types of crystalline silicon modules, we may incur higher labor and BoS costs associated with systems using our modules. Thus, to compete effectively on an LCOE basis, our modules may need to maintain a certain cost advantage per watt compared to crystalline silicon-based modules with larger form factors. BoS costs represent a significant portion of the costs associated with the construction of a typical utility-scale PV solar power system.

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In terms of energy density, in many climates, our 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.

While our modules and PV solar power systems are generally competitive in cost, reliability, and performance attributes, there can be no guarantee such competitiveness will continue to exist in the future to the same extent or at all. Any declines in the competitiveness of our products could result in additional margin compression, further declines in the average selling prices of our modules and systems, erosion in our market share for modules and systems, decreases in the rate of net sales growth, and/or declines in overall net sales. We continue to focus on enhancing the competitiveness of our solar modules and PV solar power systems by accelerating progress along our module efficiency improvement and BoS cost reduction roadmaps, continuing to make technological advances at the system level, leveraging volume procurement around standardized hardware platforms, using innovative installation techniques and know-how, and accelerating installation times to reduce labor costs.

As we continue to expand our systems business into key geographic markets, we can offer value beyond solar modules, reduce our exposure to module-only competition, provide differentiated product offerings to minimize the impact of solar module commoditization, and provide comprehensive utility-scale PV solar power system solutions that reduce solar electricity costs. Thus, our systems business allows us to play a more active role than many of our competitors in managing the demand for our solar modules. Finally, we continue to form and develop strong relationships with our customers and strategic partners around the world and continue to refine our product offerings, including EPC capabilities and O&M services, in order to enhance the competitiveness of systems using our modules. For example, we have formed, and expect in the future to form, joint ventures or other business arrangements with project developers in certain strategic markets in order to provide our modules and utility-scale PV solar energy solutions to the projects developed by such ventures.

Certain Trends and Uncertainties

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

Long Term Strategic Plan, Vision 2020

Our Long Term Strategic Plan, Vision 2020 is a long-term roadmap to achieve our growth objectives and our technology and cost leadership goals. In executing our Long Term Strategic Plan, we are focusing on providing utility-scale 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,” and elsewhere in this Annual Report on Form 10-K. 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

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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.

In order to create or maintain a market position in certain strategically targeted markets, our offerings from time to time may need to be competitively priced at levels associated with minimal gross profit margins, which may adversely affect our results of operations. We expect the profitability associated with our various sales offerings to vary from one another over time, and possibly vary from our internal long-range profitability expectations and targets, depending on the market opportunity and the relative competitiveness of our offerings compared with other energy solutions, fossil fuel-based or otherwise, that are available to potential customers. In addition, as we execute on our Long Term Strategic Plan, we will continue to monitor and adapt to any changing dynamics in the market set of potential buyers of solar project assets. Market environments with few potential project buyers and a higher cost of capital would generally exert downward pressure on the potential revenue from the uncontracted solar project assets we are developing, whereas, conversely, market environments with many potential project buyers and a lower cost of capital would likely have a favorable impact on the potential revenue from such uncontracted solar project assets.

We expect to use our working capital, the availability under our Revolving Credit Facility, or project financing to finance the construction of certain PV solar power systems for strategic purposes or to maximize the value of such systems at the time of sale. 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. We may also elect to construct and temporarily retain ownership interests in systems for which there is no PPA with an off-taker, such as a utility, but rather an intent to sell the electricity produced by the system on an open contract basis until the system is sold. We also continue to assess and pursue business arrangements that provide access to a lower cost of capital and optimize the value of our projects. Business arrangements that provide a competitive cost of capital and other benefits relating to the project sales process, such as our recently formed YieldCo (as described below and under the heading "8point3 Energy Partners LP"), have been used increasingly by renewable energy companies. Additionally, our joint ventures and other business arrangements with strategic partners have and may in the future result in us temporarily retaining a noncontrolling ownership interest in the underlying systems projects we develop, supply modules to, or construct potentially for a period of up to several years. Such business arrangements could become increasingly important to our competitive profile in markets globally, including North America. In each of the above mentioned examples, we may retain such ownership interests in a consolidated or unconsolidated separate entity.

8point3 Energy Partners LP

As previously disclosed in a Current Report on Form 8-K filed with the SEC on June 30, 2015, 8point3 Energy Partners LP (the "Partnership"), a limited partnership formed by First Solar and SunPower (the "Sponsors"), completed its

initial public offering (the "IPO") in June 2015. As part of the IPO, we contributed various projects to a subsidiary of the Partnership in exchange for a 31% interest in the entity. We also received a distribution of $283.7 million following the IPO. The Partnership owns, operates, and is expected to acquire additional solar energy generation projects from the Sponsors and is expected to provide a competitive cost of capital and greater optionality in the project sales process. The Partnership's initial project portfolio includes interests in more than 0.4 GW of various solar energy generation projects, and the Partnership also has rights of first offer on interests in over 1.1 GW of additional solar energy generation projects that are currently contracted or are expected to be contracted prior to being sold by the Sponsors. 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 Partnership are subject to market conditions. For additional information, see Item 1A: "Risk Factors – 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" and "Note 12. Investments in Unconsolidated Affiliates and Joint Ventures – 8point3 Energy Partners LP" of our consolidated financial statements included in this Annual Report on Form 10-K.

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Construction of Some of the World's Largest PV Solar Power Systems

We continue to execute on our advanced-stage utility-scale project pipeline and expect a substantial portion of our consolidated net sales, operating income, and cash flows through 2016 to be derived from several large projects in this pipeline, including the following contracted projects which will be among the world's largest PV solar power systems: the 300 MW Desert Stateline project, located in San Bernardino County, California; the 250 MW McCoy Solar Energy Project, located in Riverside County, California; the 250 MW Silver State South project, located in Clark County, Nevada; the 175 MW Astoria Project, located in Kern County, California; and the 150 MW Imperial Solar Energy Center West project, located in Imperial County, California. Our advanced stage utility-scale project pipeline also includes the following projects which are not yet sold or contracted: the 280 MW California Flats project, located in Monterey County, California; the 250 MW Moapa project, located in Clark County, Nevada; the 150 MW Rosamond project located in Kern County, California; the 150 MW Sun Streams project, located in Maricopa County, Arizona; and the 141 MW Luz del Norte project located near Copiapó, Chile. Please see the tables under "Management's Discussion and Analysis of Financial Condition and Results of Operations – Systems Project Pipeline" for additional information about these and other projects within our systems business advanced-stage project pipeline. The construction progress of these projects is subject to risks and delays as described in Item 1A: "Risk Factors," and elsewhere in this Annual Report on Form 10-K. Revenue recognition for these and other system projects is in many cases not linear in nature due to the timing of when all revenue recognition criteria are met, and consequently, period-over-period comparisons of results of operations may not be meaningful. Expected revenue from projects without a PPA, for which electricity will be sold on an open contract basis, may be subject to greater variability and uncertainty based on market factors compared to projects with a PPA.

Systems Project Pipeline

The following tables summarize, as of February 23, 2016, our approximately 3.8 GW systems business advanced-stage project pipeline. As of December 31, 2015, for the Projects Sold/Under Contract in our advanced-stage project pipeline of approximately 1.6 GW, we have recognized revenue with respect to the equivalent of approximately 0.9 GW. Such MW equivalent amount refers to the ratio of revenue recognized for the Projects Sold/Under Contract compared to the total contracted revenue for such projects, multiplied by the total MW for such projects. The remaining revenue to be recognized subsequent to December 31, 2015 for the Projects Sold/Under Contract is expected to be approximately $1.7 billion. The majority of such amount is expected to be recognized as revenue through the later of the substantial completion or closing dates of the projects. The remaining revenue to be recognized does not have a direct correlation to expected remaining module shipments for such Projects Sold/Under Contract as expected module shipments do not represent total systems revenues and do not consider the timing of when all revenue recognition criteria are met, including the timing of module installation. The actual volume of modules installed in our Projects Sold/Under Contract will be greater than the project size in MW AC as module volumes required for a project are based upon MW DC, which will be greater than the MW AC size pursuant to a DC-AC ratio typically ranging from 1.2 to 1.3. Such ratio varies across different projects due to various system design factors. Projects are removed from our advanced-stage project pipeline tables below once we have substantially completed construction and after substantially all revenue has been recognized. Projects or portions of projects may also be removed from the tables below in the event an EPC-contracted or partner-developed project does not get permitting or financing or an unsold or uncontracted project does not get sold or contracted due to the changing economics of the project or other factors.

We continually seek to make additions to our advanced-stage project pipeline. We are actively developing our early to mid-stage project pipeline in order to secure PPAs and are also pursuing opportunities to acquire advanced-stage projects, which already have PPAs in place. New additions to our project pipeline during the period from February 25, 2015 to February 23, 2016 included 250 MW AC of solar power projects in California, 279 MW AC of solar power projects in Nevada, a 150 MW AC solar power project in Arizona, a 119 MW AC solar power project in Texas, a 103

MW AC solar power project in Georgia, 99 MW AC of solar power projects in Japan, 55 MW AC of solar power projects in India, a 26 MW AC solar power project in Honduras, and an 18 MW AC solar power project in Turkey.

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Projects Sold/Under Contract
(Includes uncompleted sold projects, projects under sales contracts subject to conditions precedent, and EPC agreements including partner developed projects that we will be or are constructing.)

				As of December 31, 2015	
Project/Location	Project Size in MW AC (1)	PPA Contracted Partner	EPC Contract/Partner Developed Project	Expected Year Revenue Recognition Will Be Completed By	Percentage Complete	Percentage of Revenue Recognized
Stateline, California	300	SCE	Southern Company (2)	2016	65%	63%
McCoy, California	250	SCE	NextEra	2016	76%	76%
Silver State South, Nevada	250	SCE	NextEra	2016	70%	63%
Astoria, California	175	(3)	Recurrent	2016	28%	24%
Imperial Solar Energy Center West, California	150	SDG&E	Tenaska	2016	98%	98%
Taylor, Georgia	147	(4)	Southern Company	2016	4%	4%
Butler, Georgia	103	Georgia Power	Southern Company	2016	2%	—%
Decatur Parkway Solar, Georgia	83	Georgia Power	Southern Company	2016	97%	97%
Shams Ma’an, Jordan	53	NEPCO (5)	(3)	2016	14%	—%
Seville, California	52	Seville Solar	Seville Solar	2016	97%	97%
Elm City, North Carolina	40	UOG (6)	Duke	2016	83%	83%
Portal Ridge, California	31	PG&E/SCE (13)	(7)	2016	(7)	(7)
Total	1,634					

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Projects with Executed PPA Not Sold/Not Contracted

Project/Location	Fully Permitted	Project Size in MW AC (1)	PPA Contracted Partner	Expected or Actual Substantial Completion Year	Percentage Complete as of December 31, 2015
Tribal Solar	No	310	SCE	2019	1%
California Flats, California	No	280	PG&E/Apple Inc. (8)	2018	11%
Moapa, Nevada	Yes	250	LADWP	2016	71%
India (Multiple Locations)	No	190	TSSPDCL / APSPDCL (9)	2016	20%
Rosamond, California	Yes	150	SCE	2019	7%
Sun Streams, Arizona	Yes	150	SCE	2019	2%
Luz del Norte, Chile	Yes	141	(10)	2016	96%
East Pecos Solar, Texas	No	119	Austin Energy	2016	2%
Willow Springs, California	No	100	SCE	2019	15%
Sunshine Valley, Nevada	Yes	100	SCE	2019	1%
Switch Station 1, Nevada	No	100	Nevada Power Company	2017	9%
Switch Station 2, Nevada	No	79	Nevada Power Company / Sierra Pacific Power Company	2017	—%
Japan	Yes	59	(3)	2017/2018	4%
Miyagi, Japan	No	40	Tohoku Electric Power Company	2018	7%
Cuyama, California	Yes	40	PG&E	2017	22%
Kingbird, California	Yes	40	SCPPA / City of Pasadena (11)	2016	91%
Turkey (Multiple Locations)	No	31	(12)	2018	3%
Total		2,179			

(1) The volume of modules installed in MW DC will be higher than the MW AC size pursuant to a DC-AC ratio typically ranging from 1.2 to 1.3; such ratio varies across different projects due to various system design factors
(2) Controlling interest in the project sold to Southern Company in August 2015
(3) Contracted but not specified
(4) PPA contracted partners include Cobb Electric Membership Corporation, Flint Electric Membership Corporation, and Sawnee Electric Membership Corporation
(5) NEPCO is defined as National Electric Power Company, the country of Jordan's regulatory authority for power generation and distribution and a consortium of investors
(6) UOG is defined as Utility Owned Generation
(7) Project sold under a development agreement in February 2016
(8) PG&E 150 MW AC and Apple Inc. 130 MW AC
(9) TSSPDCL is defined as Southern Power Distribution Company of Telangana State Ltd and consists of 110 MW AC of projects; and APSPDCL is defined as Andhra Pradesh Southern Power Distribution Company Ltd and consists of 80 MW AC of projects
(10) No PPA – Electricity to be sold on an open contract basis
(11) SCPPA is defined as Southern California Public Power Authority; SCPPA 20 MW AC and City of Pasadena 20 MW AC

(12) Electricity expected to be sold under feed-in-tariff structure for ten years, pending acquisition of certain licenses
(13) PG&E 11 MW AC and SCE 20 MW AC

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Results of Operations

During 2015, we revised our previously issued financial statements from 2011 to 2014 to properly record a liability associated with an uncertain tax position related to income of a foreign subsidiary. Additional revisions were made for previously identified errors that were corrected in a period subsequent to the period in which the error originated. All financial information presented herein was revised to reflect the correction of these errors. See Note 1 “First Solar and Its Business – Revision of Previously Issued Financial Statements” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information.

The following table sets forth our consolidated statements of operations as a percentage of net sales for the years ended December 31, 2015, 2014, and 2013:

	Years Ended December 31,		
	2015	2014	2013
Net sales	100.0 %	100.0 %	100.0 %
Cost of sales	74.3 %	75.7 %	73.9 %
Gross profit	25.7 %	24.3 %	26.1 %
Research and development	3.6 %	4.2 %	4.1 %
Selling, general and administrative	7.1 %	7.5 %	8.2 %
Production start-up	0.5 %	0.2 %	0.1 %
Restructuring and asset impairments	— %	— %	2.6 %
Operating income	14.4 %	12.4 %	11.2 %
Foreign currency (loss) gain, net	(0.2)%	— %	— %
Interest income	0.6 %	0.5 %	0.5 %
Interest expense, net	(0.2)%	(0.1)%	(0.1)%
Other expense, net	(0.2)%	(0.1)%	(0.2)%
Income tax benefit (expense)	0.2 %	(0.9)%	(0.9)%
Equity in earnings of unconsolidated affiliates, net of tax	0.6 %	(0.1)%	— %
Net income	15.3 %	11.7 %	10.6 %

Segment Overview

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules which convert sunlight into electricity, and our systems segment includes the development, construction, operation, and maintenance of PV solar power systems, which primarily use our solar modules.

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. See also Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Systems Project Pipeline” for a description of the system projects in our advanced-stage project pipeline.

Product Revenue

The following table sets forth the total amounts of solar module and solar power system net sales for the years ended December 31, 2015, 2014, and 2013. For the purpose of the following table, (i) solar module revenue is composed of total net sales from the sale of solar modules to third parties, and (ii) solar power system revenue is composed of total net sales from the sale of PV solar power systems and related services and solutions including the solar modules installed in the systems we develop and construct along with revenue generated from such systems (in thousands):

	2015	2014	2013
Solar module revenue	$227,461	$228,319	$380,869
Solar power system revenue	3,351,534	3,162,868	2,928,747

Net sales	$3,578,995	$3,391,187	$3,309,616

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Solar module revenue to third parties decreased by $0.9 million during 2015 compared to 2014 primarily due to a 10% decrease in the average selling price per watt, partially offset by an 11% increase in the volume of watts sold.

Solar power system revenue increased by $188.7 million during 2015 compared to 2014 primarily due to higher revenue from module plus transactions. Our net sales for 2015 also included the sale of majority interests in the partially constructed Desert Stateline project and North Star project and higher revenue from our Silver State South, McCoy, and Imperial Energy Center West projects, which commenced construction in late 2014. These 2015 net sales were offset by lower revenue from the completion, or substantial completion, of our Desert Sunlight, Solar Gen 2, Topaz, and Campo Verde projects in 2014.

Solar module revenue to third parties decreased by $152.6 million during 2014 compared to 2013 primarily as a result of a 26% decrease in the volume of watts sold and a 19% decrease in the average selling price per watt.

Solar power system revenue increased by $234.1 million during 2014 compared to 2013 primarily as a result of the number and size of projects under construction between these periods as well as the timing of when all the revenue recognition criteria was met. Specifically, the increase was attributable to higher revenue from the partial sale of our Solar Gen 2 project, the sale of our Campo Verde and Macho Springs projects, and the commencement of construction and related revenue recognition on multiple projects in California and our AGL Nyngan project in Australia. These increases were partially offset by decreases in systems business project revenue from our Desert Sunlight project as it neared substantial completion, our completed first phase of the Imperial Solar Energy Center South project and our completed Amherstburg, Belmont, Walpole, and Agua Caliente projects.

Net sales

Components Business

We generally price and sell our solar modules per watt of nameplate power. During 2015, a significant portion of net sales for the components business related to modules included in our PV solar power systems described below under “Net Sales – Systems Business.” Other than the modules included in our systems, we sold the majority of our solar modules to integrators and operators of systems in India and Great Britain.

From time to time we enter into module sales agreements with customers worldwide for specific projects or volumes of modules. Such agreements are generally short-term in nature. During 2015, 11% and 8% of our components business net sales, excluding modules installed in our PV solar power systems, were denominated in British pounds and Euros, respectively, and were subject to fluctuations in the exchange rate between such currencies and the U.S. dollar.

Under our standard sales contracts for solar modules, we transfer title and risk of loss to the customer and recognize revenue upon shipment. Pricing is typically fixed or determinable at the time of shipment, and our customers generally do not have extended payment terms or rights of return under these contracts. Our revenue recognition policies for the components business are described further in Note 2 “Summary of Significant Accounting Policies” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

During 2015, Southern Power Company; Strata Solar, LLC; and NextEra Energy, Inc. each accounted for more than 10% of our components business’ net sales, which includes the solar modules used in our systems projects.

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. Additionally, we may temporarily own and operate certain of our PV solar power systems, which are also included within our systems business. We typically use the percentage-of-completion method using actual costs incurred over total estimated costs to construct a project (including module costs) as our standard accounting policy and apply this method after all revenue recognition criteria have been met. There are also instances in which we recognize revenue after a project has been completed, primarily due to a project not being sold prior to completion or because all revenue recognition criteria are not met until the project is completed. Our revenue recognition policies for the systems business are described in further detail in Note 2 “Summary of Significant Accounting Policies” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

During 2015, the majority of our systems business net sales were generated in North America, and the principal customers of our systems business were NextEra Energy, Inc. and Southern Power Company, each of which accounted for more than 10% of the segment’s net sales.

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The following table shows net sales by reportable segment for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Components	$1,389,579	$1,102,674	$1,173,947	$286,905	26 %	$(71,273)	(6)%
Systems	2,189,416	2,288,513	2,135,669	(99,097)	(4)%	152,844	7 %
Net sales	$3,578,995	$3,391,187	$3,309,616	$187,808	6 %	$81,571	2 %

Net sales from our components segment, which includes solar modules used in our systems projects, increased by $286.9 million in 2015 primarily due to a 33% increase in the volume of watts sold, partially offset by a 5% decrease in the average selling price per watt. Net sales from our systems segment, which excludes solar modules used in our systems projects, decreased by $99.1 million in 2015 primarily as a result of lower revenue from the completion, or substantial completion, of our Desert Sunlight, Solar Gen 2, Topaz, and Campo Verde projects in 2014. These decreases were partially offset by the sale of majority interests in the partially constructed Desert Stateline project and North Star project, and higher revenue from our Silver State South, McCoy, and Imperial Solar Energy Center West projects, which commenced construction in late 2014.

Net sales from our components segment, which includes solar modules used in our systems projects, decreased by $71.3 million in 2014 primarily due to a 12% decrease in the average selling price per watt, partially offset by a 7% increase in the volume of watts sold. Net sales from our systems segment, which excludes solar modules used in our systems projects, increased by $152.8 million in 2014 primarily as a result of the number and size of projects under construction between these periods as well as the timing of when all the revenue recognition criteria have been met. Specifically, the increase was attributable to higher revenue from the partial sale of our Solar Gen 2 project, the sale of our Campo Verde and Macho Springs projects, and the commencement of construction and related revenue recognition on multiple projects in California and our AGL Nyngan project in Australia. These increases were partially offset by decreases in systems business project revenue from our Desert Sunlight project as it neared substantial completion, our completed first phase of the Imperial Solar Energy Center South project and our completed Amherstburg, Belmont, Walpole, and Agua Caliente projects.

Cost of sales

Components Business

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

As further described in Note 23 “Segment and Geographical Information” to our consolidated financial statements for the year ended December 31, 2015 included within this Annual Report on Form 10-K, we include the sale of our solar modules manufactured by our components business and used by our systems business within net sales of our components business. Therefore, the related cost of sales is also included within our components business.

Systems Business

For our systems business, project-related costs include standard EPC costs (consisting primarily of BoS costs for inverters, electrical and mounting hardware, project management and engineering costs, and construction labor costs), site specific costs, and development costs (including nonrefundable transmission upgrade costs, interconnection fees, and permitting costs).

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The following table shows cost of sales by reportable segment for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change					
(Dollars in thousands)	2015	2014	2013	2015 over 2014			2014 over 2013		
Components	$1,041,726	$1,009,164	$1,085,441	$32,562	3	%	$(76,277)	(7)	%
Systems	1,618,002	1,557,082	1,359,543	60,920	4	%	197,539	15	%
Cost of sales	$2,659,728	$2,566,246	$2,444,984	$93,482	4	%	$121,262	5	%
% of net sales	74.3 %	75.7 %	73.9 %						

Our cost of sales increased $93.5 million, or 4%, and decreased 1.4 percentage points as a percentage of net sales when comparing 2015 with 2014. The increase in cost of sales was driven by a $60.9 million increase in our systems segment cost of sales primarily due to a mix of lower gross profit system projects sold or under construction during the period. Our components segment cost of sales increased by a $32.6 million primarily as a result of the following:

- Higher costs of $309.4 million associated with the increased volume of modules sold as part of our systems business projects; partially offset by
- Continued manufacturing cost reductions of $135.1 million;
- A reduction in our module collection and recycling obligation of $69.6 million resulting from the implementation of advanced recycling technologies, which significantly increased the throughput of modules able to be recycled at a point in time, along with other material and labor cost reductions; and
- Lower underutilization penalties of $55.0 million due to the improved capacity utilization of our manufacturing facilities. During 2015, we ran our factories at approximately 92% capacity utilization, which represented an 11.0 percentage point increase from 2014.

Our costs of sales increased $121.3 million, or 5%, and increased 1.8 percentage points as a percentage of net sales when comparing 2014 with 2013. The increase in cost of sales was primarily due to a $197.5 million increase in our systems segment cost of sales primarily for BoS components and other construction and development costs related to the number of projects and the timing of when all revenue recognition criteria were met along with a mix of higher cost projects. These increases were partially offset by a $76.3 million reduction in cost of sales for our components segment primarily due to the following:

- Continued manufacturing cost reductions of $164.9 million and
- Lower inventory write-off and asset impairment charges of $16.8 million; partially offset by
- Higher costs of $67.9 million associated with increased solar module sales volumes and
- A reduction in our module collection and recycling obligation of $43.3 million recorded during 2013.

Gross profit

Gross profit is affected by numerous factors, including the selling prices of our modules and systems, our manufacturing costs, BoS costs, project development costs, the capacity utilization of our manufacturing facilities, and foreign exchange rates. Gross profit is also affected by the mix of net sales generated by our components and systems businesses. Gross profit for our systems business excludes the net sales and cost of sales for solar modules used in our systems projects as these amounts are included in the gross profit of our components business.

The following table shows gross profit for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change					
(Dollars in thousands)	2015	2014	2013	2015 over 2014			2014 over 2013		
Gross profit	$919,267	$824,941	$864,632	$94,326	11	%	$(39,691)	(5)	%
% of net sales	25.7 %	24.3 %	26.1 %						

Gross profit as a percentage of net sales increased by 1.4 percentage points during 2015 compared with 2014 primarily due to a reduction in our module collection and recycling obligation and improved utilization of our manufacturing facilities. Gross profit as a percentage of net sales decreased by 1.8 percentage point during 2014 compared with 2013 primarily due to a mix of lower gross profit projects sold and under construction in 2014 and an adjustment for lower estimated recycling costs recorded in 2013. These decreases in gross profit were partially offset by favorable changes in estimated costs on systems projects accounted for under the percentage-of-completion method, a lower volume of third-party module net sales, which generally have margins less than systems business projects, and improved utilization of our manufacturing facilities.

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Research and development

Research and development expense consists primarily of salaries and personnel-related costs, the cost of products, materials, and outside services used in our process and product research and development activities for both the components and systems businesses, and depreciation and amortization expense associated with research and development specific facilities and equipment. The majority of our research and development expense is attributable to our components segment. We maintain a number of programs and activities to improve our technology and processes in order to enhance the performance and reduce the costs of our solar modules and PV solar power systems using our modules.

The following table shows research and development expense for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Research and development	$130,593	$143,969	$134,300	$(13,376)	(9)%	$9,669	7 %
% of net sales	3.6 %	4.2 %	4.1 %				

The decrease in our research and development expense during 2015 compared to 2014 was primarily due to reduced material and module testing costs associated with the development of next-generation CdTe solar modules and lower costs for outside services, partially offset by higher employee compensation expense. During 2015, the average conversion efficiency of our CdTe solar modules produced was 15.6% compared to 14.0% in 2014.

The increase in our research and development expense during 2014 compared to 2013 was primarily attributable to additional costs related to the development of our next-generation CdTe solar modules, our joint collaboration agreement with GE to further advance our CdTe solar technology, and higher employee compensation costs. During 2014, the average conversion efficiency of our CdTe solar modules was 14.0% compared to 13.2% in 2013.

Selling, general and administrative

Selling, general and administrative expense consists primarily of salaries and other personnel-related costs, professional fees, insurance costs, travel expenses, and other business development and selling expenses. Our components and systems businesses each have their own dedicated administrative key functions, such as accounting, legal, finance, project finance, human resources, procurement, and marketing. Costs for these functions are recorded and included within selling, general and administrative expense of the respective segment. Our key corporate support functions consist primarily of company-wide tax, treasury, accounting, legal, finance, investor relations, information technology, communications, government relations, and executive management. These corporate functions and the assets supporting such functions benefit both the components and systems segments. We allocate corporate costs to the components and systems segments as part of selling, general and administrative costs based upon the estimated benefits provided to each segment from these corporate functions. We determine the estimated benefits provided to each segment for these corporate costs based upon a combination of the estimated time spent by corporate employees supporting each segment and the average relative selling, general and administrative costs incurred by each segment before such corporate allocations.

The following table shows selling, general and administrative expense for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
	$255,192	$253,827	$270,261	$1,365	1 %	$(16,434)	(6)%

Selling, general and administrative						
% of net sales	7.1	%	7.5	%	8.2	%

Our selling, general and administrative expenses increased by $1.4 million, or 1%, and were 7.1% and 7.5% as a percentage of net sales, when comparing 2015 with 2014, respectively. The increase was mainly attributable to higher employee compensation expense and higher professional fees associated with the initial public offering of 8point3 Energy Partners LP, partially offset by lower project development expense and lower accretion expense associated with the reduction in our module collection and recycling obligation.

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Our selling, general and administrative expenses decreased by $16.4 million, or 6%, and were 7.5% and 8.2% as a percentage of net sales, when comparing 2014 with 2013, respectively. The most significant items affecting our selling, general and administrative costs during 2014 and 2013 are as follows:

- Lower depreciation and amortization expense of $14.4 million primarily due to accelerated depreciation for certain leasehold improvements and the sale of our Mesa facility in 2013 and
- Lower employee compensation and benefits expense of $5.4 million primarily as a result of lower incentive and share-based compensation; partially offset by
- Higher business development expense of $4.0 million driven by our expansion into certain key geographic markets.

Production start-up

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

The following table shows production start-up expense for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change				
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013		
Production start-up	$16,818	$5,146	$2,768	$11,672	227 %	$2,378	86	%
% of net sales	0.5 %	0.2 %	0.1 %					

During 2015 and 2014, our production start-up expense related to the commencement of our TetraSun operations at our manufacturing facility in Kulim, Malaysia. Our TetraSun operations involve the manufacturing of crystalline silicon solar modules with proprietary high-power density, mono-crystalline technology. These production start-up activities commenced during the third quarter of 2014. During 2015, we also incurred start-up expenses related to a manufacturing line at our facility in Perrysburg, Ohio. Production start-up expense for 2013 was primarily for global manufacturing personnel dedicated to plant expansion, new equipment installations, equipment upgrades, and process improvements for both new and existing plants.

Restructuring and asset impairments

Restructuring and asset impairment expense includes those expenses incurred related to material restructuring initiatives and includes severance and employee termination costs that are directly related to such restructuring initiatives, costs associated with contract terminations, and other restructuring related costs. These restructuring initiatives are intended to align the organization with current business conditions and to reduce costs.

The following table shows restructuring and asset impairment expense for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change				
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013		
	$—	$—	$86,896	$—	— %	$(86,896	) (100	)%

Restructuring and asset impairments						
% of net sales	—	%	—	%	2.6	%

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During 2013, our restructuring and asset impairment expense included $5.2 million related to restructuring initiatives associated with the closure of our German manufacturing plants and our decision not to move forward with our previously planned four-line manufacturing plant in Vietnam. Additionally, during 2013 we recorded an asset impairment charge of $56.5 million related to the agreement to sell our Mesa, Arizona facility and an additional $25.2 million impairment charge to adjust the carrying value of our plant in Vietnam. The effect of these asset impairments reduced the book values of both our Mesa, Arizona facility and Vietnam plant to their respective fair values, less costs to sell. See Note 4 “Asset Impairments” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information.

Foreign currency (loss) gain, net

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

The following table shows foreign currency (loss) gain, net for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change				
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013		
Foreign currency (loss) gain, net	$(6,868)	$(1,461)	$893	$(5,407)	370 %	$(2,354)	(264)%	

Foreign currency loss increased during 2015 compared with 2014. The increase was primarily due to differences between our economic hedge positions and the underlying exposures along with changes in foreign currency rates, which included the strengthening of the U.S. dollar relative to certain foreign currencies. Foreign currency loss increased during 2014 compared with 2013, primarily due to differences between our economic hedge positions and the underlying exposure along with changes in foreign currency rates.

Interest income

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

The following table shows interest income for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change				
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013		
Interest income	$22,516	$18,030	$16,752	$4,486	25 %	$1,278	8 %	

Interest income during 2015 increased compared to 2014 primarily as a result of higher average balances of notes receivable due from affiliates. Interest income during 2014 was consistent with 2013.

Interest expense, net

Interest expense is incurred on various debt financings. We capitalize interest expense into our project assets or property, plant and equipment when such costs qualify for interest capitalization, which reduces the amount of net interest expense reported in any given period.

The following table shows interest expense, net for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change				
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013		
Interest expense, net	$(6,975)	$(1,982)	$(1,884)	$(4,993)	252 %	$(98)	5 %	

Interest expense, net of amounts capitalized increased in 2015 compared to 2014 primarily as a result of higher levels of project specific debt financings. Interest expense, net of amounts capitalized during 2014 was consistent with 2013.

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Other expense, net

Other expense, net is primarily comprised of miscellaneous items, amounts excluded from hedge effectiveness, and realized gains and losses on the sale of marketable securities.

The following table shows other expense, net for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Other expense, net	$(5,502)	$(4,485)	$(5,189)	$(1,017)	23%	$704	(14)%

Other expense, net in 2015 was consistent with other expense, net in 2014 and 2013.

Income before taxes and equity in earnings of unconsolidated affiliates

The following table shows income before taxes and equity in earnings of unconsolidated affiliates for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Components	$171,817	$(105,531)	(221,230)	$277,348	(263)%	$115,699	(52)%
Systems	348,018	537,632	602,209	(189,614)	(35)%	(64,577)	(11)%
Total income before taxes	$519,835	$432,101	$380,979	$87,734	20%	$51,122	13%

Components segment income before taxes increased by $277.3 million during 2015 compared to 2014 primarily due to the increase in net sales resulting from higher volumes of module sold as part of systems projects, the reduction in our module collection and recycling obligation, improved utilization of our manufacturing assets, and lower selling, general and administrative expense. Systems segment income before income taxes decreased by $189.6 million during 2015 compared to 2014 primarily as a result of the decrease in net sales, a mix of lower gross profit systems projects sold or under construction during the period, and higher selling, general and administrative expense.

Components segment loss before income taxes decreased by $115.7 million during 2014 compared to 2013 primarily due to lower restructuring and asset impairment charges related to the sale of our facility in Mesa, Arizona and a decrease in selling, general and administrative expense mainly driven by less depreciation and amortization expense for certain leasehold improvements and our Mesa facility. These reductions were partially offset by a reduction in our module collection and recycling obligation recorded during 2013. Systems segment income before income taxes decreased $64.6 million during 2014 compared to 2013 primarily as a result of a mix of lower gross profit systems projects sold and under construction in 2014 and higher selling, general and administrative expense. These items were partially offset by favorable changes in estimated costs on systems projects accounted for under the percentage-of-completion method.

Income tax benefit (expense)

Income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect our best assessment of estimated current and future taxes to be paid. We are subject to income taxes in both the United States and numerous foreign jurisdictions in which we operate; principally Australia, Germany, and Malaysia. Significant judgments and estimates are required in determining our consolidated income tax expense. In Malaysia, we have been granted a long-term tax holiday, scheduled to expire in 2027, pursuant to which substantially all of our income earned in Malaysia is exempt from income tax.

The following table shows income tax benefit (expense) for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Income tax benefit (expense)	$6,156	$(31,188)	$(30,098)	$37,344	(120)%	$(1,090)	4 %
Effective tax rate	(1.2)%	7.2 %	7.9 %				

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Income tax expense decreased by $37.3 million during 2015 compared to 2014. The decrease in income tax expense was primarily the result of a $41.7 million discrete tax benefit associated with the receipt of a private letter ruling during the period. See Note 20 “Income Taxes” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information.

Income tax expense increased by $1.1 million during 2014 compared with 2013. The increase in income tax expense was primarily attributable to an increase in pretax book income earned in higher tax jurisdictions in 2014, partially offset by a discrete tax benefit due to the expiration of the statute of limitations for various uncertain tax positions. See Note 20 “Income Taxes” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information.

Equity in earnings of unconsolidated affiliates, net of tax

Equity in earnings of unconsolidated affiliates, net of tax represents our proportionate share of the earnings and losses of unconsolidated affiliates with whom we have made equity method investments.

The following table shows equity in earnings of unconsolidated affiliates, net of tax for the years ended December 31, 2015, 2014, and 2013:

	Years Ended			Change			
(Dollars in thousands)	2015	2014	2013	2015 over 2014		2014 over 2013	
Equity in earnings, net of tax	20,430	(4,949)	(163)	$25,379	(513)%	$(4,786)	(100)%

Equity in earnings of unconsolidated affiliates, net of tax increased during 2015 compared to 2014 primarily as a result of our investment in 8point3 Operating Company, LLC, a subsidiary of 8point3 Energy Partners LP, along with the impairments of certain investments during 2014. Losses from unconsolidated affiliates increased during 2014 compared to 2013 primarily due to the impairments of certain investments.

Liquidity and Capital Resources

As of December 31, 2015, we believe that our cash, cash equivalents, marketable securities, cash flows from operating activities including the contracted portion of our advanced-stage project pipeline, availability under our Revolving Credit Facility considering minimum liquidity covenant requirements, and access to the capital markets will be sufficient to meet our working capital, systems project investment, and capital expenditure needs for at least the next 12 months. We monitor our working capital to ensure we have adequate liquidity, both domestically and internationally. Additionally, we have an active shelf registration statement filed with the SEC for the issuance of debt or equity securities if needed.

We intend to maintain appropriate debt levels based upon cash flow expectations, our overall cost of capital, and expected cash requirements for operations, capital expenditures, and discretionary strategic spending. In the future, we may also engage in additional debt or equity financings, including project specific debt financings. We believe that when necessary, we will have adequate access to the capital markets, although our ability to raise capital on terms commercially acceptable to us could be constrained if there is insufficient lender or investor interest due to industry-wide or company-specific concerns. Such financings could result in increased debt service expenses or dilution to our existing stockholders.

As of December 31, 2015, we had $1.8 billion in cash, cash equivalents, and marketable securities compared with $2.0 billion as of December 31, 2014. Cash, cash equivalents, and marketable securities as of December 31, 2015 decreased primarily as the result of financing the construction of certain solar power projects. As of December 31,

2015 and 2014, $1.5 billion and $1.4 billion, respectively, of our cash, cash equivalents, and marketable securities were held by foreign subsidiaries and were generally based in U.S. dollar and Euro denominated holdings. We utilize a variety of tax planning and financing strategies in an effort to ensure that our worldwide cash is available in the locations in which it is needed.

Our expanding systems business requires liquidity and is expected to continue to have significant liquidity requirements in the future. The net amount of our project assets, deferred project costs, billings in excess of costs and estimated earnings, and payments and billings for deferred project costs, which approximates our net capital investment in the development and construction of systems projects as of December 31, 2015 was $1.2 billion. Solar power project development and construction cycles, which span the time between the identification of a site location and the commercial operation of a system, vary substantially and can take many years to mature. As a result of these long project cycles and strategic decisions to finance the construction of certain projects, we may need to make significant up-front investments of resources in advance of the receipt of any cash from the sale

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of such projects. These up-front investments may include using our working capital, the availability under our Revolving Credit Facility, or entering into project financing arrangements to finance the construction of our systems projects. For example, we may have to complete, or substantially complete, the construction of a systems project before such project is sold. Delays in construction progress or in completing the sale of our systems projects that we are self-financing may also impact our liquidity. We have historically financed these up-front systems project investments primarily using working capital. In certain circumstances, we may need to finance construction costs exclusively using working capital, if project financing becomes unavailable due to market-wide, regional, or other concerns.

We are partnering with local developers on project development in markets around the world where we may take an equity stake in a project for a number of years. We are also self-developing projects in such markets where we may hold all or a significant portion of the equity in the projects for several years. Given the duration of these investments and the currency risk relative to the U.S. dollar in some of these new markets, we continue to explore local financing alternatives. Should these financing alternatives be unavailable or too cost prohibitive, we could be exposed to significant currency risk and our liquidity could be adversely impacted.

Additionally, we may elect to retain an ownership interest in certain systems projects after they become operational if we determine it would be of economic and strategic benefit to do so. If, for example, we cannot sell a systems project at economics that are attractive to us or potential customers are unwilling to assume the risks and rewards typical of PV solar power system ownership, we may instead elect to temporarily own and operate such systems until we can sell the systems on economically attractive terms. As with traditional electricity generating assets, the selling price of a PV solar power system could be higher at or post-completion to reflect the elimination of construction and performance risks and other uncertainties. The decision to retain ownership of a system impacts liquidity depending upon the size and cost of the project. As of December 31, 2015, we had $93.7 million of PV solar power systems that have been placed in service. We may elect to enter into temporary or long-term project financing to reduce the impact on our liquidity and working capital. We also formed a limited partnership YieldCo vehicle described under “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Certain Trends and Uncertainties – 8point3 Energy Partners LP” and may consider entering into tax equity or other arrangements with respect to ownership interests in certain of our projects, which could cause a portion of the economics of such projects to be recognized over time.

The following additional considerations have impacted or may impact our liquidity in 2016 and beyond:

- The amount of accounts receivable, unbilled and retainage as of December 31, 2015 was $59.2 million, which included $40.2 million of unbilled amounts. These unbilled accounts receivable represent revenue that has been recognized in advance of billing the customer under the terms of the underlying construction contracts. Such construction costs have been funded with working capital, and the unbilled amounts are expected to be billed and collected from customers during the next 12 months. Once we meet the billing criteria under a construction contract, we bill our customers accordingly and reclassify the accounts receivable, unbilled and retainage to accounts receivable trade, net. The amount of accounts receivable, unbilled and retainage as of December 31, 2015 also included $19.0 million of retainage, which represents the portion of a systems project contract price earned by us for work performed, but held for payment by our customer as a form of security until we reach certain construction milestones. Such retainage amounts relate to construction costs incurred and construction work already performed.

- The amount of solar module inventory and BoS parts as of December 31, 2015 was $446.3 million. As we continue with the construction of our advanced-stage project pipeline, we must produce solar modules and procure BoS parts in the required volumes to support our planned construction schedules. As part of this construction cycle, we typically must manufacture modules or acquire the necessary BoS parts for construction activities in advance of receiving payment for such materials, which may temporarily reduce our liquidity. Once solar modules and BoS parts are

installed in a project, such installed amounts are classified as either project assets, deferred project costs, PV solar power systems, or cost of sales depending upon whether the project is subject to a definitive sales contract and whether all revenue recognition criteria have been met. As of December 31, 2015, $237.5 million, or 77%, of our solar module inventory was either on-site or in-transit to our systems projects. All BoS parts are for our systems business projects.

We may commit working capital during 2016 and beyond to acquire solar power projects in various stages of development, including advanced-stage projects with PPAs, and to continue developing those projects as necessary.

- Depending upon the size and stage of development, costs to acquire such solar power projects could be significant. When evaluating project acquisition opportunities, we consider both the strategic and financial benefits of any such acquisitions.

Joint ventures or other strategic arrangements with partners are a key part of our strategy. We have initiatives in several markets to expedite our penetration of those markets and establish relationships with potential customers.

- Some of these arrangements involve and are expected to involve significant investments or other allocations of capital that could reduce

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our liquidity or require us to pursue additional sources of financing, assuming such sources are available to us. Additionally, we have elected and may in the future elect or be required to temporarily retain a noncontrolling ownership interest in certain underlying systems projects we develop, supply modules to, or construct. Any such retained ownership interest is expected to impact our liquidity to the extent we do not obtain new sources of capital to fund such investments.

- During 2016, we expect to spend $300 million to $400 million for capital expenditures, including expenditures for upgrades to our existing machinery and equipment, which we believe will further increase our solar module conversion efficiencies.

- Under sales agreements for certain of our solar power projects, we may be required to repurchase such projects if certain events occur, such as not achieving commercial operation of the project within a certain time frame. Although we consider the possibility that we would be required to repurchase any of our solar power projects to be remote, our current working capital and other available sources of liquidity may not be sufficient to make any required repurchase. If we are required to repurchase a solar power project, we would have the ability to market and sell such project at then current market pricing, which could be at a lower than expected price to the extent the event requiring the repurchase impacts the project's marketability. Our liquidity may also be impacted as the time between the repurchase of a project and the potential sale of such repurchased project could take several months.

Global sovereign debt problems and their impact on the balance sheets and lending practices of global banks, such as the disruption in the credit markets during and after the 2008 financial crisis, 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. Such problems could also similarly affect our customers and therefore limit the demand for our systems projects or solar modules. As of December 31, 2015, our liquidity, marketable securities, and restricted investments have not been materially adversely impacted by the current credit environment, and we believe that they will not be materially adversely impacted in the near future. We will continue to closely monitor our liquidity and the credit markets. However, we cannot predict with any certainty the impact to us of any further disruption in the current credit environment.

Cash Flows

The following table summarizes our cash flow activity for the years ended December 31, 2015, 2014, and 2013 (in thousands):

	Years Ended		
	2015	2014	2013
Net cash (used in) provided by operating activities	$(360,919)	$680,989	$856,126
Net cash used in investing activities	(112,140)	(511,879)	(537,106)
Net cash provided by financing activities	137,103	7,359	101,164
Effect of exchange rate changes on cash and cash equivalents	(19,272)	(19,487)	3,594
Net (decrease) increase in cash and cash equivalents	$(355,228)	$156,982	$423,778

Operating Activities

The decrease in cash provided by operating activities during 2015 was primarily driven by the increase in project assets and deferred project costs resulting from our financing the construction of certain projects with our working capital and increases in our trade accounts receivable. The decrease in cash provided by operating activities during 2014 was primarily attributable to the timing of cash received from customers for the sale of certain systems projects.

Investing Activities

The decrease in cash used in investing activities during 2015 was driven by the receipt of $239.0 million from the initial public offering of 8point3 Energy Partners LP, changes in our restricted cash balance, and lower purchases of property, plant and equipment. The effects of these items were partially offset by net purchases of marketable securities of $203.1 million during 2015 compared to $77.5 million during 2014. The decrease in cash used in investing activities during 2014 was primarily due to changes in our restricted cash balance, lower proceeds from sales of property, plant and equipment, and certain investments in affiliate notes receivable. The effects of these items were partially offset by net purchases of marketable securities of $77.5 million during 2014 compared to $341.0 million during 2013.

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Financing Activities

Cash provided by financing activities during 2015 resulted primarily from $146.0 million of proceeds from borrowings under our project construction credit facilities in Chile, Japan, and India and $44.7 million of proceeds from the leaseback financing associated with the Maryland Solar project, partially offset by $47.1 million of payments on long-term debt. Cash provided by financing activities during 2014 resulted primarily from $65.6 million of proceeds from borrowings under our project construction credit facilities in Chile, partially offset by $60.1 million of payments on long-term debt. Cash provided by financing activities during 2013 was primarily driven by proceeds from our June 2013 equity offering of $428.2 million, partially offset by net payments on our revolving credit facility of $270.0 million and $65.0 million of payments on long-term debt.

Contractual Obligations

The following table presents our contractual obligations as of December 31, 2015 (in thousands), which consists of legal commitments requiring us to make fixed or determinable cash payments. We purchase raw materials for inventory, construction materials, various services, and manufacturing equipment from a variety of vendors. During the normal course of business, in order to manage manufacturing and construction lead times and help assure an adequate supply of certain items, we enter into agreements with suppliers that either allow us to procure goods and services when we choose or that establish purchase requirements over the term of the agreement.

	Total	Payments Due by Year			
		Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
Long-term debt obligations	$299,327	$38,331	$97,111	$17,715	$146,170
Interest payments (1)	104,591	16,531	23,371	20,339	44,350
Capital lease obligations	1,122	540	517	65	—
Operating lease obligations	164,970	16,824	27,403	15,883	104,860
Sale-leaseback payments (2)	19,611	5,277	10,380	3,954	—
Purchase obligations (3)	789,723	736,026	18,689	11,238	23,770
Recycling obligations	163,407	—	—	—	163,407
Contingent consideration (4)	17,988	9,232	8,756	—	—
Other obligations (5)	56,069	7,912	16,839	17,075	14,243
Total	$1,616,808	$830,673	$203,066	$86,269	$496,800

(1) Includes estimated cash interest to be paid over the remaining terms of the underlying debt. Interest payments are based on fixed and floating rates in effect at December 31, 2015 and include the effect of interest rate and cross currency swap agreements.

(2) Sale-leaseback payments represent the fixed rent payments associated with our leaseback of the Maryland Solar project from a subsidiary of 8point3 Energy Partners LP. See Note 12 “Investments in Unconsolidated Affiliates and Joint Ventures” to our consolidated financial statements for further information.

(3) Purchase obligations are agreements to purchase goods or services that are noncancelable, enforceable, and legally binding and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum, or variable price provisions; and the approximate timing of the transactions.

(4) In connection with project acquisitions, we may agree to pay additional amounts to project sellers upon achievement of project-related milestones such as obtaining a PPA, obtaining financing, and selling to a new owner. We recognize a contingent liability when we determine that such liability is both probable and reasonably estimable. See Note 16 “Commitments and Contingencies” to our consolidated financial statements for the year

ended December 31, 2015 included in this Annual Report on Form 10-K for further information about our contingent consideration.

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

In addition to the amounts shown in the table above, we have recorded $141.8 million of unrecognized tax benefits as liabilities in accordance with Accounting Standards Codification ("ASC") 740, Income Taxes, and we are uncertain as to if or when such amounts may be settled.

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Off-Balance Sheet Arrangements

We have no off-balance sheet debt or similar obligations, other than financial assurance related instruments and operating leases, that are not classified as debt. We do not guarantee any third-party debt. See Note 15 “Commitments and Contingencies,” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for further information about our financial assurance related instruments.

Recent Accounting Pronouncements

See Note 3 “Recent Accounting Pronouncements” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for a summary of recent accounting pronouncements.

Critical Accounting Estimates

In preparing our financial statements in conformity with generally accepted accounting principles in the United States, we make estimates and assumptions that affect the amounts of reported assets, liabilities, revenues, and expenses, as well as the disclosure of contingent liabilities in our consolidated financial statements and the related notes thereto. Some of our accounting policies require the application of significant judgment by management in the selection of the appropriate assumptions for making these estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We base our judgments and estimates on our historical experience, our forecasts, and other available information, as appropriate. Our significant accounting policies are described in Note 2 “Summary of Significant Accounting Policies” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K. Our critical accounting estimates, which require the most significant management estimates and judgment in determining the amounts reported in our consolidated financial statements included in this Annual Report on Form 10-K, are as follows:

Revenue Recognition – Systems Business. We recognize revenue for arrangements entered into by our systems business generally using two revenue recognition models, following the guidance in either ASC 605-35, Construction-Type and Production-Type Contracts, or ASC 360-20, Real Estate Sales, for arrangements which include land or land rights.

Systems business sales arrangements in which we construct a PV solar power system for a specific customer on land that is controlled by the customer, and has not been previously controlled by First Solar, are accounted for under ASC 605-35. For such sales arrangements, we use the percentage-of-completion method, as described further below, using actual costs incurred over total estimated costs to develop and construct the system (including module costs) as our standard accounting policy.

Systems business sales arrangements in which we convey control of land or land rights as part of the transaction are accounted for under ASC 360-20. Accordingly, we use one of the following revenue recognition methods, based upon an evaluation of the substance and form of the terms and conditions of such real estate sales:

(i) We apply the percentage-of-completion method, as further described below, to certain real estate sales arrangements in which we convey control of land or land rights, when a sale has been consummated, we have transferred the usual risks and rewards of ownership to the buyer, the initial and continuing investment criteria have been met, we have the ability to estimate our costs and progress toward completion, and all other revenue recognition criteria have been met. When evaluating whether the usual risks and rewards of ownership have transferred to the buyer, we consider whether we have or may be contingently required to have any prohibited forms of continuing involvement with the project pursuant to ASC 360-20. The initial and continuing investment

requirements, which demonstrate a buyer's commitment to honor its obligations for the sales arrangement, can typically be met through the receipt of cash or an irrevocable letter of credit from a highly creditworthy lending institution.

(ii) Depending on whether the initial and continuing investment requirements have been met and whether collectability from the buyer is reasonably assured, we may align our revenue recognition and release of project assets or deferred project costs to cost of sales with the receipt of payment from the buyer if the sale has been consummated and we have transferred the usual risks and rewards of ownership to the buyer.

For any systems business sales arrangements containing multiple deliverables (including our solar modules) not required to be accounted for under ASC 605-35 (long-term construction contracts) or ASC 360-20 (real estate), we analyze each activity within the sales arrangement to adhere to the separation guidelines of ASC 605-25 for multiple-element arrangements. We allocate revenue for any transactions involving multiple elements to each unit of accounting based on its relative selling price and recognize revenue for each unit of accounting when all revenue recognition criteria for a unit of accounting have been met.

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Our system business sales arrangements within the scope of ASC 360-20 involve a range of standard product warranties, which include limited solar module warranties, limited BoS warranties, and system energy performance testing. Each standard product warranty program represents a risk of the module manufacturer or system EPC contractor, and is not an obligation or risk of a system owner. These programs do not represent any guarantee of energy output and relate to the underlying performance of the system assets. Consequently, our product warranty programs do not represent any guarantees of cash flows related to the systems, and we have not assumed any of the risks and rewards of ownership with respect to such programs. Separately, our systems customers may also engage us to provide O&M services, which would typically include an effective availability guarantee. Our availability guarantees are an incremental offering within separate arrangements for O&M services. Availability guarantees are guarantees of our own service performance and do not represent guarantees of a system's output or cash flows. Accordingly, our product warranties and market based service contracts are not forms of continuing involvement that would indicate that substantially all of the risks and rewards of ownership have not been transferred to the system owner.

Revenue Recognition – Percentage-of-Completion. In applying the percentage-of-completion method, we use the actual costs incurred relative to the total estimated costs (including module costs) in order to determine the progress towards completion and calculate the corresponding amount of revenue and profit to recognize. Costs incurred include direct materials, solar modules, labor, subcontractor costs, and those indirect costs related to contract performance, such as indirect labor and supplies. We recognize direct material and solar module costs as incurred when the direct materials and solar modules have been installed in the project. When contracts specify that title to direct materials and solar modules transfers to the customer before installation has been performed, we will not recognize revenue or the associated costs until those materials are installed and have met all other revenue recognition requirements. We consider direct materials and solar modules to be installed when they are permanently placed or affixed to a PV solar power system as required by engineering designs. Solar modules manufactured and owned by us that will be used in our systems remain within inventory until such modules are installed in a system.

The percentage-of-completion method of revenue recognition requires us to make estimates of net contract revenues and costs to complete our projects. In making such estimates, management judgments are required to evaluate significant assumptions including the amount of net contract revenues, the cost of materials and labor, expected labor productivity, the impact of potential variances in schedule completion, and the impact of any penalties, claims, change orders, or performance incentives.

If estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of the revisions to estimates related to net contract revenues and costs to complete contracts, including penalties, claims, change orders, performance incentives, anticipated losses, and others are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. The effect of the changes on future periods are recognized as if the revised estimates had been used since revenue was initially recognized under the contract. Such revisions could occur in any reporting period, and the effects may be material depending on the size of the contracts or the changes in estimates.

Accrued Solar Module Collection and Recycling Liability. At the time of sale, we record our collection and recycling obligation based on the estimated cost to collect and recycle the covered solar modules. We estimate the cost of our collection and recycling obligations based on the present value of the expected probability weighted future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging materials, the cost of freight from the solar module installation sites to a recycling center, 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. In the periods between the time of sale and the related settlement of the

collection and recycling obligation, we accrete the carrying amount of the associated liability by applying the discount rate used for its initial measurement. We periodically review our estimates of expected future recycling costs and may adjust our liability accordingly.

During the year ended December 31, 2015, we completed our annual cost study of obligations under our module collection and recycling program based on newly implemented recycling technologies at our manufacturing facility in Perrysburg, Ohio and reduced our associated liability by $80.0 million. The new recycling technology represents a significant improvement over previous technologies and contains a continuous flow recycling process, which increases the throughput of modules able to be recycled at a point in time. Such process improvements also result in corresponding reductions in capital, chemical, labor, maintenance, and other general recycling costs, which further contribute to the reduction in the recycling rate per module and corresponding change in the liability. At December 31, 2015, our estimated liability for collecting and recycling solar modules covered by our collection and recycling program was $163.4 million. A 1% increase in the annualized inflation rate used in our estimated future collection and recycling cost per module would increase our liability by $36.7 million, and a 1% decrease in that rate would decrease our liability by $30.7 million.

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Product Warranties and Accrued Expense in Excess of Product 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 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.

In addition to our limited solar module warranty described above, 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.

When we recognize revenue for module or systems sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations. We make and revise these estimates based primarily on the number of our solar modules under warranty installed at customer locations, our historical experience with warranty claims, our monitoring of field installation sites, our internal testing of and the expected future performance of our solar modules and BoS components, and our estimated per-module replacement costs.

We may also accrue expenses for the cost of any voluntary remediation programs beyond our normal product warranty. Our estimates for such remediation programs are based on an evaluation of available information including the estimated number of potentially affected solar modules, historical experience related to our remediation efforts, customer-provided data related to potentially affected systems, estimated costs for performing removal, replacement, and logistical services, and any post-sale expenses covered under our voluntary remediation program. If any of our estimates prove incorrect, we could be required to accrue additional expenses.

At December 31, 2015, our accrued liabilities for product warranties and accrued expense in excess of product warranties were $231.8 million and $24.6 million, respectively. We have historically estimated our product warranty liability for power output and defects in materials and workmanship under normal use and service conditions to have an estimated warranty return rate of approximately 3% of modules covered under warranty. A 1% change in the estimated warranty return rate would change our estimated product warranty liability by $71.5 million, and a 1% change in the estimated warranty return rate for BoS components would not have a material impact on the associated warranty liability.

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Performance Guarantees. For systems sales arrangements, we also 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 to demonstrate that the actual energy generation for the first year meets or exceeds the modeled energy expectation, after certain adjustments. These tests are based on meteorological, energy, and equipment performance data measured at the system's location as well as certain projections of such data over the remaining measurement period. If there is an underperformance event with regards to these tests, we may incur liquidated damages as a percentage of the EPC contract price. If necessary, we accrue estimates for liquidated damages at the end of each reporting period based on our performance testing. In certain instances, a bonus payment may be received at the end of the first year if the system performs above a specified level.

As part of our O&M service offerings, we typically offer an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a specific period after adjusting for factors outside of our control as the service provider, such as weather, curtailment, outages, force majeure, and other conditions that may affect system availability. Effective availability guarantees are only offered as part of our O&M services and terminate at the end of an O&M arrangement. These guarantees are based on meteorological, energy, and equipment performance data measured at the system's location as well as certain projections of such data over the remaining measurement period. If we fail to meet the contractual threshold for these guarantees, we may incur liquidated damages for certain lost energy under the PPA. If necessary, we accrue estimates for liquidated damages at the end of each reporting period based on our effective availability calculations. Conversely, many of our O&M agreements contain provisions whereby we may receive a bonus payment if system availability exceeds a separate threshold.

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

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

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

We must also assess the likelihood that each of our deferred tax assets will be realized. To the extent we believe that realization of any of our deferred tax assets is not more likely than not, we establish a valuation allowance. When we establish a valuation allowance or increase this allowance in a reporting period, we generally record a corresponding tax expense in our consolidated statement of operations. Conversely, to the extent circumstances indicate that a valuation allowance is no longer necessary, that portion of the valuation allowance is reversed, which generally reduces our overall income tax expense.

We also consider the earnings of our foreign subsidiaries and determine whether such amounts are indefinitely reinvested. Accordingly, no additional U.S. or non-U.S. taxes have been accrued that may be incurred if such amounts were repatriated to the United States. We have concluded that, except for the earnings of our Canadian subsidiary and with respect to previously taxed income, all such accumulated earnings are currently indefinitely reinvested or that if upon repatriation no additional U.S. or non-U.S. tax would be due. If our intention to indefinitely reinvest the earnings of our foreign subsidiaries changes, additional U.S. and non-U.S. taxes may be required to be accrued. See Note 20 “Income Taxes” to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information.

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We continually explore initiatives to better align our tax and legal entity structure with the footprint of our non-U.S. operations and recognize the tax impact of these initiatives, including changes in the assessment of uncertain tax positions, indefinite reinvestment exception assertions, and the realizability of deferred tax assets, in the period when we believe all necessary internal and external approvals associated with such initiatives have been obtained, or when the initiatives are materially complete. It is possible that the completion of one or more of these initiatives may occur within the next 12 months.

Long-Lived Asset Impairment. We are required to assess the recoverability of the carrying value of long-lived assets including property, plant and equipment, PV solar power systems, and project assets when an indicator of impairment has been identified. We review our long-lived assets each reporting period to assess whether impairment indicators are present, and we must exercise judgment in assessing whether an event indicating potential impairment has occurred. For purposes of recognition and measurement of an impairment loss, a long-lived asset is grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities, and we must exercise judgment in assessing such groupings and levels.

For long-lived assets, when impairment indicators are present, we compare undiscounted future cash flows, including the eventual disposition of the asset group at market value, to the asset group's carrying value to determine if the asset group is recoverable. This assessment requires the exercise of judgment in assessing the future use of and projected value to be derived from the assets to be held and used. Assessments also consider changes in asset group utilization, including the temporary idling of capacity and the expected timing of placing the capacity back into production.

For an asset group that fails the test of recoverability described above, the estimated fair value of long-lived assets may be determined using an income approach, market approach, cost approach, or a combination of one or more of these approaches as appropriate for the particular asset group being reviewed. All of these approaches start with the forecast of expected future net cash flows including the eventual disposition at market value of the long-lived assets. We also utilize third-party valuations and information available regarding the current market for similar assets. If there is an impairment, a loss is recorded to reflect the difference between the asset group's fair value and carrying value prior to impairment. This may require judgment in estimating future cash flows, relevant discount rates, and residual values applied in the income approach used in estimating the current fair value of the impaired assets to be held and used.

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

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

The first step in a two-step impairment test is the comparison of the fair value of a reporting unit with its carrying amount, including goodwill. Our reporting units consist of our fully integrated systems business, CdTe module

manufacturing business, and our crystalline silicon module manufacturing business from our TetraSun acquisition in 2013. In accordance with the authoritative guidance over fair value measurements, we define the fair value of a reporting unit as the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. We primarily use the income approach methodology of valuation, which includes the discounted cash flow method, to estimate the fair values of our reporting units.

Significant management judgment is required when estimating the fair value of our reporting units including the forecasting of future operating results and the selection of discount and expected future growth rates that we use in determining the projected cash flows. If the estimated fair value of a reporting unit exceeds its carrying value, goodwill is not impaired and no further analysis is required.

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If the carrying value of a reporting unit exceeds its estimated fair value in the first step, then we are required to perform the second step of the impairment test. In this step, we assign the fair value of the reporting unit calculated in step one to all of the assets and liabilities of the reporting unit, as if a market participant just acquired the reporting unit in a business combination. The excess of the fair value of the reporting unit determined in the first step of the impairment test over the total amount assigned to the assets and liabilities in the second step of the impairment test represents the implied fair value of goodwill. If the carrying value of a reporting unit's goodwill exceeds the implied fair value of goodwill, we would record an impairment loss equal to the difference. If there is no such excess, then all goodwill for a reporting unit is considered impaired.

Item 7A: Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Exchange Risk

Our primary foreign currency exposures are cash flow exposure, transaction exposure, and earnings translation exposure.

Cash Flow Exposure. We expect many of our subsidiaries to have material future cash flows that will be denominated in currencies other than the subsidiaries' functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge a portion of these forecasted cash flows. These foreign exchange forward contracts qualify for accounting as cash flow hedges in accordance with ASC 815, and we designated them as such. We initially report the effective portion of a derivative's unrealized gain or loss in "Accumulated other comprehensive income" and subsequently reclassify amounts into earnings when the hedged transaction occurs and impacts earnings.

Our operations in Malaysia pay a portion of their operating expenses, such as associate wages and utilities, in Malaysian ringgit, exposing us to foreign currency exchange risk for those Malaysian ringgit expenses. As we expand into new markets worldwide, particularly emerging markets, our total foreign currency exchange risk, in terms of both size and exchange rate volatility, and the number of foreign currencies we are exposed to could increase significantly.

For additional details on our derivative hedging instruments and activities, refer to Note 10 "Derivative Financial Instruments" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

Our international customers accounted for 13% of our net sales during the year ended December 31, 2015, of which 40% of these international net sales were denominated in Australian dollars. Our international customers accounted for 10% and 14% of our net sales during the years ended December 31, 2014 and 2013, respectively, of which 25% and 38% of these international net sales, respectively, were denominated in Euro. As a result, we have exposure to foreign currency exchange risk with respect to our net sales. Fluctuations in exchange rates, particularly in the U.S. dollar to Australian dollar, U.S. dollar to Euro, and U.S. dollar to Malaysian ringgit, affect our gross profit and could result in foreign exchange and operating losses. In the past, most of our exposure to foreign currency exchange risk has related to currency gains and losses between the time we sign and settle our sales contracts denominated in Australian dollars and Euros. For the year ended December 31, 2015, a 10% change in the U.S. dollar to Australian dollar exchange rate would have impacted our net sales by $18.6 million, excluding the effect of our hedging activities. During the years ended December 31, 2014 and 2013, a 10% change in the U.S. dollar to Euro exchange rate would have impacted our net sales by $8.8 million and $18.3 million, respectively, excluding the effect of our hedging activities.

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

For additional details on our economic hedging instruments and activities, refer to Note 10 "Derivative Financial Instruments" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

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If the U.S. dollar weakened by 10% against the Chinese yuan, Singapore dollar, and Vietnamese dong, we would have incurred an additional $4.5 million in foreign currency losses for the year ended December 31, 2015.

Earnings Translation Exposure. Fluctuations in foreign currency exchange rates create volatility in our reported results of operations because we are required to translate the financial statements of our subsidiaries that do not have a U.S. dollar functional currency. We do not hedge translation exposure at this time, but may, in the future, decide to purchase forward exchange contracts or other instruments to offset this impact from currency fluctuations.

In the past, currency exchange rate fluctuations have had an impact on our business and results of operations. For example, currency exchange rate fluctuations impacted our cash flows by $19.3 million (unfavorable), $19.5 million (unfavorable), and $3.6 million (favorable) for the years ended December 31, 2015, 2014, and 2013, respectively. Although we cannot predict the impact of future currency exchange rate fluctuations on our business or results of operations, we believe that we will continue to have risk associated with currency exchange rate fluctuations in the future.

Interest Rate Risk

Our primary interest rate risks relate to our outstanding variable rate debt, our system sales prices from the effect of interest rates on our customers' financing of such systems, and our investments in marketable securities and restricted investments.

Variable Rate Debt Exposure. We are exposed to interest rate risk because our Revolving Credit Facility, Malaysian Ringgit Facility Agreement, Malaysian Euro Facility Agreement, the floating rate portion of our Malaysian Facility Agreement, and various project construction credit facilities have variable interest rates, exposing us to variability in interest expense and cash flows. We use interest rate and cross-currency swap contracts to mitigate our exposure to interest rate fluctuations associated with a portion of our variable rate debt instruments. We have interest rate swap contracts in place to mitigate the interest rate risk for the floating rate portion of our Malaysian Facility Agreement. We also have a cross-currency swap contract in place to mitigate the interest rate risk of our Malaysian Ringgit Facility Agreement. For additional details on our derivative hedging instruments and activities, refer to Note 10 "Derivative Financial Instruments" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K.

An increase in the Euro Interbank Offered Rate ("EURIBOR") would impact our cost of borrowing under our Malaysian euro facility agreement, an increase in the prime rate or London Interbank Offered Rate ("LIBOR") would impact our cost of borrowing under our Revolving credit facility, and an increase in Tokyo Interbank Offered Rate ("TIBOR") or equivalent variable rates would impact our cost of borrowings under our project construction credit facilities. If these variable rates changed by 100 basis points, our interest cost for the year ended December 31, 2015 would have changed by $0.3 million, including the effect of our hedging activities.

Effect of Interest Rates on our Customers' Financing of Systems. We are exposed to interest rate risk because many of our systems business customers depend on debt financing to purchase a PV solar power system from us. Although the useful life of a PV solar power system is considered to be approximately 25 years, owners of our systems must pay the entire cost of the system by the time such system is completed. As a result, many of our customers rely on debt financing to fund their up-front capital expenditures. An increase in interest rates available to finance such purchases could make it difficult for our customers to secure the financing and underlying interest rate necessary to purchase a system. Such factors could lower demand or the price we can charge for our systems and reduce our net sales and gross profit. In addition, we believe that a significant percentage of our customers purchase systems as an investment, funding the initial capital expenditure through a combination of equity and debt. An increase in interest rates could lower an investor's return on investment in a system or make alternative investments more attractive relative to solar

power systems, which, in each case, could cause these end-users to seek alternative investments that promise higher returns.

Investments in Marketable Securities and Restricted Investments Exposure. We invest in various debt securities, which exposes us to interest rate risk. The primary objective of our investment activities is to preserve principal and provide liquidity, while at the same time maximizing the income we receive from our investments without significantly increasing risk. Some of the securities in which we invest may be subject to market risk. This means that a change in prevailing interest rates may cause the market value of the investment to fluctuate. For example, if we hold a security that was issued with an interest rate fixed at the then-prevailing rate and the prevailing interest rate later rises, the market value of our investment may decline.

To provide a meaningful assessment of the interest rate risk associated with our investments in marketable securities and restricted investments, we performed a sensitivity analysis to determine the impact a change in interest rates would have on the value of our investments assuming a 100 basis point change in interest rates. During 2015, our marketable securities earned a pre-tax yield of less than 1% and had a weighted average maturity of 17 months as of December 31, 2015. Based on our investment

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positions as of December 31, 2015, a hypothetical 100 basis point change in interest rates would result in a $9.1 million change in the market value of our investment portfolio. As of December 31, 2014, a similar 100 basis point change in interest rates would have resulted in a $3.7 million change in the market value of our investment portfolio. As of December 31, 2015, our marketable securities were comprised of foreign debt and time deposits.

During 2015, our restricted investments earned a pre-tax yield of 2% and had a weighted average maturity of approximately 19 years as of December 31, 2015. Based on our investment positions as of December 31, 2015, a hypothetical 100 basis point change in interest rates would result in a $60.9 million change in the market value of our restricted investment portfolio. As of December 31, 2014, a similar 100 basis point change in interest rates would have resulted in a $74.4 million change in the market value of our restricted investment portfolio. As of December 31, 2015, all of our restricted investments were in foreign and U.S. government obligations.

Commodity and Component Risk

We are exposed to price risks for the raw materials, components, and energy costs used in the manufacturing and transportation of our solar modules and BoS parts used in PV solar power systems. Also, some of our raw materials and components are sourced from a limited number of suppliers or a single supplier. We endeavor to qualify multiple suppliers using a robust qualification process. In some cases, we also enter into long-term supply contracts for raw materials and components. As a result, we remain exposed to price changes in the raw materials and components used in our solar modules. In addition, the failure of a key supplier could disrupt our supply chain, which could result in higher prices and/or a disruption in our manufacturing or construction processes. We may be unable to pass along changes in the cost of the raw materials and components for our products and systems to our customers and may be in default of our delivery obligations if we experience a manufacturing or construction disruption.

Credit Risk

We have certain financial and derivative instruments that subject us to credit risk. These consist primarily of cash, cash equivalents, marketable securities, restricted cash and investments, trade accounts receivable, notes receivable, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash equivalents, marketable securities, restricted cash and investments, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts with various high-quality financial institutions and limit the amount of credit risk from any one counterparty. We continuously evaluate the credit standing of our counterparty financial institutions. Our net sales are primarily concentrated among a limited number of customers. We monitor the financial condition of our customers and perform credit evaluations whenever considered necessary. Depending upon the sales arrangement, we may require some form of payment security from our customers, including bank guarantees or commercial letters of credit.

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Item 8: Financial Statements and Supplementary Data

Consolidated Financial Statements

Our consolidated financial statements as required by this item are included in Item 15: "Exhibits and Financial Statement Schedules – Consolidated Financial Statements." See Item 15(a)(1) for a list of our consolidated financial statements.

Selected Quarterly Financial Data (Unaudited)

The following selected quarterly financial data should be read in conjunction with our consolidated financial statements, the related notes thereto and Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations." This information has been derived from our unaudited consolidated financial statements that, in our opinion, reflect all recurring adjustments necessary to fairly present this information when read in conjunction with our consolidated financial statements and the related notes thereto appearing in the section entitled "Consolidated Financial Statements." We have revised our unaudited consolidated financial statements from March 31, 2014 through June 30, 2015 to properly record a liability associated with an uncertain tax position related to income of a foreign subsidiary. Additional revisions have been made for previously identified errors that were corrected in a period subsequent to the period in which the error originated. All selected quarterly financial data presented herein was revised to reflect the correction of these errors. See "Note 1. First Solar and Its Business – Revision of Previously Issued Financial Statements" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for additional information. The results of operations for any quarter are not necessarily indicative of the results to be expected for any future period.

	Quarters Ended							
	Dec 31, 2015	Sep 30, 2015	Jun 30, 2015	Mar 31, 2015	Dec 31, 2014	Sep 30, 2014	Jun 30, 2014	Mar 31, 2014
	(In thousands, except per share amounts)							
Net sales	$942,324	$1,271,245	$896,217	$469,209	$1,007,993	$890,288	$546,283	$946,623
Gross profit	231,438	484,365	164,483	38,981	308,382	189,402	94,828	232,329
Operating income (loss)	131,823	397,821	57,133	(70,113)	199,221	83,875	4,011	134,892
Net income (loss)	164,135	349,318	93,885	(60,917)	193,318	89,833	5,079	107,734
Net income per share:								
Basic	$1.62	$3.46	$0.93	$(0.61)	$1.93	$0.90	$0.05	$1.08
Diluted	$1.60	$3.41	$0.92	$(0.61)	$1.90	$0.89	$0.05	$1.06

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

None.

Item 9A: Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our

Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognizes that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Based on their evaluation as of the end of the period covered by this Annual Report on Form 10-K, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of that date.

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(b) Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate "internal control over financial reporting," as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2015 based on the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America.

Based on the results of our evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2015.

The effectiveness of our internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report which appears herein.

(c) Changes in Internal Control over Financial Reporting

We carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of our "internal control over financial reporting" as defined in Exchange Act Rule 13a-15(f) and Rule 15d-15(f) to determine whether any changes in our internal control over financial reporting occurred during the year ended December 31, 2015 that materially affected, or are reasonably likely to material affect, our internal control over financial reporting.

Based on that evaluation, there have been no such changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(d) Inherent Limitations on Effectiveness of Controls

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

Item 9B: Other Information

Majority Voting Standard for Uncontested Director Elections

On February 18, 2016, our Board of Directors approved an amendment and restatement of the Company's bylaws (the "Amended and Restated Bylaws") and Corporate Governance Guidelines (the "Amended and Restated Corporate Governance Guidelines"), effective February 18, 2016. The Company's prior majority voting policy for uncontested director elections, previously appearing in the Corporate Governance Guidelines, was replaced with a majority voting standard for uncontested director elections directly in the bylaws. The Amended and Restated Bylaws and the Amended and Restated Corporate Governance Guidelines are filed as Exhibits 3.2 and 10.17 hereto, respectively, and are incorporated herein by reference.

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PART III

Item 10: Directors, Executive Officers, and Corporate Governance

Information concerning our board of directors and audit committee will appear in our 2016 Proxy Statement, under the sections entitled “Directors” and “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

For information with respect to our executive officers, see Item 1: “Business – Executive Officers of the Registrant.”

Information concerning Section 16(a) beneficial ownership reporting compliance will appear in our 2016 Proxy Statement under the section entitled “Section 16(a) Beneficial Ownership Reporting Compliance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

We have adopted a Code of Business Conduct and Ethics that applies to all directors, officers, and associates of First Solar. Information concerning this code will appear in our 2016 Proxy Statement under the section entitled “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Item 11: Executive Compensation

Information concerning executive compensation and related information will appear in our 2016 Proxy Statement under the section entitled “Executive Compensation,” and information concerning the Compensation Committee will appear under “Corporate Governance” and “Compensation Committee Report.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

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

Information concerning the security ownership of certain beneficial owners and management and related stockholder matters, including certain information regarding our equity compensation plans, will appear in our 2016 Proxy Statement under the section entitled “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Equity Compensation Plans

The following table sets forth certain information as of December 31, 2015 concerning securities authorized for issuance under our equity compensation plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights (a)(1)	Weighted-Average Exercise Price of Outstanding Options and Rights (b)(2)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))(c)(3)

Equity compensation plans approved by our stockholders	2,974,493	$—	6,128,406
Equity compensation plans not approved by our stockholders	—	—	—
Total	2,974,493	$—	6,128,406

(1) Includes 2,974,493 shares issuable upon vesting of restricted stock units ("RSUs") granted under our 2010 and 2015 Omnibus Incentive Compensation Plans.

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

(3) Includes 952,270 shares of common stock reserved for future issuance under our stock purchase plan for employees.

See Note 18 "Share-Based Compensation" to our consolidated financial statements for the year ended December 31, 2015 included in this Annual Report on Form 10-K for further discussion on our equity compensation plans.

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Item 13: Certain Relationships and Related Transactions, and Director Independence

Information concerning certain relationships and related party transactions will appear in our 2016 Proxy Statement under the section entitled “Certain Relationships and Related Party Transactions.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference. Information concerning director independence will appear in our 2016 Proxy Statement under the section entitled “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Item 14: Principal Accountant Fees and Services

Information concerning principal accountant fees and services and the audit committee’s pre-approval policies and procedures will appear in our 2016 Proxy Statement under the section entitled “Principal Accountant Fees and Services.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

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PART IV

Item 15: Exhibits and Financial Statement Schedules

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

(1) Consolidated Financial Statements

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

(2) Financial Statement Schedule:

Schedule II – Valuation and Qualifying Accounts

SCHEDULE II: VALUATION AND QUALIFYING ACCOUNTS
For the Years Ended December 31, 2015, 2014, and 2013

Description	Balance at Beginning of Year	Additions	Deductions	Balance at End of Year
	(In thousands)			
Allowance for doubtful accounts receivable				
Year ended December 31, 2013	$14,503	$2,489	$(4,682)	$12,310
Year ended December 31, 2014	12,310	24	(5,226)	7,108
Year ended December 31, 2015	7,108	11	(7,117)	2

(3) Exhibits: See Item 15(b) below.

(b) Exhibits: The exhibits listed on the accompanying Index to Exhibits on this Annual Report on Form 10-K are filed, or incorporated into this Annual Report on Form 10-K by reference.

(c) Financial Statement Schedule: See Item 15(a)(1) above.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized on February 24, 2016.

	FIRST SOLAR, INC.
By:	/s/ BRYAN SCHUMAKER
	Bryan Schumaker
	Chief Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ JAMES A. HUGHES James A. Hughes	Chief Executive Officer and Director	February 24, 2016
/s/ MARK R. WIDMAR Mark R. Widmar	Chief Financial Officer	February 24, 2016
Additional Directors:		
/s/ SHARON L. ALLEN Sharon L. Allen	Director	February 24, 2016
/s/ RICHARD D. CHAPMAN Richard D. Chapman	Director	February 24, 2016
/s/ GEORGE A. HAMBRO George A. Hambro	Director	February 24, 2016
/s/ CRAIG KENNEDY Craig Kennedy	Director	February 24, 2016
/s/ JAMES F. NOLAN James F. Nolan	Director	February 24, 2016
/s/ J. THOMAS PRESBY J. Thomas Presby	Director	February 24, 2016
/s/ PAUL H. STEBBINS Paul H. Stebbins	Director	February 24, 2016
/s/ MICHAEL SWEENEY Michael Sweeney	Director	February 24, 2016

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Report of Independent Registered Public Accounting Firm

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

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of First Solar, Inc. and its subsidiaries at December 31, 2015 and December 31, 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management’s Report on Internal Control over Financial Reporting appearing under Item 9A(b). Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP

Phoenix, Arizona
February 24, 2016

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FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	December 31, 2015	2014
ASSETS		
Current assets:		
Cash and cash equivalents	$1,126,826	$1,482,054
Marketable securities	703,454	509,032
Accounts receivable trade, net	500,629	135,434
Accounts receivable, unbilled and retainage	59,171	76,971
Inventories	380,424	505,088
Balance of systems parts	136,889	125,083
Deferred project costs	187,940	29,354
Notes receivable, affiliate	1,276	12,487
Prepaid expenses and other current assets	248,977	202,151
Total current assets	3,345,586	3,077,654
Property, plant and equipment, net	1,284,136	1,419,988
PV solar power systems, net	93,741	46,393
Project assets and deferred project costs	1,111,137	810,348
Deferred tax assets, net	357,693	313,891
Restricted cash and investments	333,878	407,053
Investments in unconsolidated affiliates and joint ventures	399,805	255,029
Goodwill	84,985	84,985
Other intangibles, net	110,002	119,236
Inventories	107,759	115,617
Notes receivable, affiliates	17,887	9,127
Other assets	69,722	61,670
Total assets	$7,316,331	$6,720,991
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$337,668	$214,656
Income taxes payable	1,330	1,727
Accrued expenses	409,452	388,156
Current portion of long-term debt	38,090	51,399
Billings in excess of costs and estimated earnings	87,942	195,346
Payments and billings for deferred project costs	28,580	60,591
Other current liabilities	57,738	88,664
Total current liabilities	960,800	1,000,539
Accrued solar module collection and recycling liability	163,407	246,307
Long-term debt	251,325	162,074
Other liabilities	392,312	320,584
Total liabilities	1,767,844	1,729,504
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value per share; 500,000,000 shares authorized; 101,766,797 and 100,288,942 shares issued and outstanding at December 31, 2015 and 2014,	102	100

respectively		
Additional paid-in capital	2,742,795	2,697,558
Accumulated earnings	2,790,110	2,243,689
Accumulated other comprehensive income	15,480	50,140
Total stockholders' equity	5,548,487	4,991,487
Total liabilities and stockholders' equity	$7,316,331	$6,720,991

See accompanying notes to these consolidated financial statements.

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FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Years Ended December 31,		
	2015	2014	2013
Net sales	$3,578,995	$3,391,187	$3,309,616
Cost of sales	2,659,728	2,566,246	2,444,984
Gross profit	919,267	824,941	864,632
Operating expenses:			
Research and development	130,593	143,969	134,300
Selling, general and administrative	255,192	253,827	270,261
Production start-up	16,818	5,146	2,768
Restructuring and asset impairments	—	—	86,896
Total operating expenses	402,603	402,942	494,225
Operating income	516,664	421,999	370,407
Foreign currency (loss) gain, net	(6,868)	(1,461)	893
Interest income	22,516	18,030	16,752
Interest expense, net	(6,975)	(1,982)	(1,884)
Other expense, net	(5,502)	(4,485)	(5,189)
Income before taxes and equity in earnings of unconsolidated affiliates	519,835	432,101	380,979
Income tax benefit (expense)	6,156	(31,188)	(30,098)
Equity in earnings of unconsolidated affiliates, net of tax	20,430	(4,949)	(163)
Net income	$546,421	$395,964	$350,718
Net income per share:			
Basic	$5.42	$3.96	$3.74
Diluted	$5.37	$3.90	$3.67
Weighted-average number of shares used in per share calculations:			
Basic	100,886	100,048	93,697
Diluted	101,815	101,643	95,468

See accompanying notes to these consolidated financial statements.

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FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Years Ended December 31,		
	2015	2014	2013
Net income	$546,421	$395,964	$350,718
Other comprehensive (loss) income, net of tax:			
Foreign currency translation adjustments	(16,432)	(19,147)	4,295
Unrealized (loss) gain on marketable securities and restricted investments	(15,415)	90,741	(39,685)
Unrealized (loss) gain on derivative instruments	(2,813)	4,322	(565)
Other comprehensive (loss) income, net of tax	(34,660)	75,916	(35,955)
Comprehensive income	$511,761	$471,880	$314,763

See accompanying notes to these consolidated financial statements.

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FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
	Shares	Amount				
Balance, December 31, 2012	87,145	$87	$2,066,021	$1,497,007	$ 10,179	$3,573,294
Net income	—	—	—	350,718	—	350,718
Other comprehensive loss	—	—	—	—	(35,955)	(35,955)
Common stock issued for share-based compensation	1,244	1	5,346	—	—	5,347
Share-based compensation tax benefits	—	—	21,017	—	—	21,017
Tax withholding related to vesting of restricted stock	(380)	—	(11,979)	—	—	(11,979)
Share-based compensation expense	—	—	53,684	—	—	53,684
Common stock issued for acquisition	1,750	2	83,753	—	—	83,755
Common stock issued for public offering	9,747	10	428,180	—	—	428,190
Balance, December 31, 2013	99,506	100	2,646,022	1,847,725	(25,776)	4,468,071
Net income	—	—	—	395,964	—	395,964
Other comprehensive income	—	—	—	—	75,916	75,916
Common stock issued for share-based compensation	1,126	—	4,950	—	—	4,950
Share-based compensation tax benefits	—	—	24,505	—	—	24,505
Tax withholding related to vesting of restricted stock	(344)	—	(23,100)	—	—	(23,100)
Share-based compensation expense	—	—	45,181	—	—	45,181
Balance, December 31, 2014	100,288	100	2,697,558	2,243,689	50,140	4,991,487
Net income	—	—	—	546,421	—	546,421
Other comprehensive loss	—	—	—	—	(34,660)	(34,660)
Common stock issued for share-based compensation	1,782	2	5,886	—	—	5,888
Share-based compensation tax benefits	—	—	14,567	—	—	14,567
Tax withholding related to vesting of restricted stock	(303)	—	(18,189)	—	—	(18,189)
Share-based compensation expense	—	—	42,973	—	—	42,973
Balance, December 31, 2015	101,767	$102	$2,742,795	$2,790,110	$ 15,480	$5,548,487

See accompanying notes to these consolidated financial statements.

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FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2015	2014	2013
Cash flows from operating activities:			
Net income	$546,421	$395,964	$350,718
Adjustments to reconcile net income to cash (used in) provided by operating activities:			
Depreciation, amortization and accretion	257,825	245,798	234,370
Impairment and net loss on disposal of long-lived assets	14,593	5,228	97,132
Share-based compensation	44,899	43,810	54,585
Equity in earnings of unconsolidated affiliates, net of tax	(20,430)	4,949	163
Remeasurement of monetary assets and liabilities	(4,043)	7,216	(16,261)
Deferred income taxes	(17,534)	14,068	(20,878)
Excess tax benefits from share-based compensation arrangements	(17,707)	(31,166)	(35,076)
Other, net	520	1,780	870
Changes in operating assets and liabilities:			
Accounts receivable, trade, unbilled and retainage	(340,292)	462,630	570,731
Prepaid expenses and other current assets	(38,635)	(36,805)	119,241
Inventories and balance of systems parts	113,537	(99,870)	15,394
Project assets and deferred project costs	(857,529)	143,047	(316,705)
Other assets	(8,484)	(5,371)	(1,684)
Accounts payable	143,872	(53,057)	(92,828)
Income taxes payable	(13,281)	(1,131)	36,392
Accrued expenses and other liabilities	(85,425)	(442,153)	(150,686)
Accrued solar module collection and recycling liability	(79,226)	26,052	10,648
Net cash (used in) provided by operating activities	(360,919)	680,989	856,126
Cash flows from investing activities:			
Purchases of property, plant and equipment	(166,438)	(257,549)	(282,576)
Proceeds from sales of property, plant and equipment	77	1,532	116,403
Purchases of marketable securities	(556,479)	(305,396)	(435,015)
Proceeds from sales and maturities of marketable securities	353,359	227,900	93,984
Purchases of equity and cost method investments	(27,475)	(24,967)	(17,905)
Distributions received from equity method investments	238,980	—	—
Investments in notes receivable, affiliates	(55,163)	(72,692)	—
Payments received on notes receivable, affiliate	57,866	49,517	17,108
Change in restricted cash	44,037	(124,061)	5,173
Acquisitions, net of cash acquired	—	(4,306)	(30,745)
Other investing activities	(904)	(1,857)	(3,533)
Net cash used in investing activities	(112,140)	(511,879)	(537,106)
Cash flows from financing activities:			
Repayment of borrowings under revolving credit facility	—	—	(605,000)
Proceeds from borrowings under revolving credit facility	—	—	335,000
Repayment of long-term debt	(47,078)	(60,063)	(64,954)
Proceeds from borrowings under long-term debt, net of discounts and issuance costs	146,027	65,563	—
Repayment of sale-leaseback financing	(3,702)	—	—

Proceeds from sale-leaseback financing	44,718	—	—
Excess tax benefits from share-based compensation arrangements	17,707	31,166	35,076
Proceeds from equity offering, net of issuance costs	—	—	428,190
Contingent consideration payments and other financing activities	(20,569)	(29,307)	(27,148)
Net cash provided by financing activities	137,103	7,359	101,164
Effect of exchange rate changes on cash and cash equivalents	(19,272)	(19,487)	3,594
Net (decrease) increase in cash and cash equivalents	(355,228)	156,982	423,778
Cash and cash equivalents, beginning of the period	1,482,054	1,325,072	901,294
Cash and cash equivalents, end of the period	$1,126,826	$1,482,054	$1,325,072
Supplemental disclosure of noncash investing and financing activities:			
Equity interests retained from the partial sale of project assets	$324,430	$220,679	$—
Property, plant and equipment acquisitions funded by liabilities	$17,749	$61,130	$60,677
Acquisitions currently or previously funded by liabilities and contingent consideration	$17,988	$53,894	$97,885
Shares issued for acquisition	$—	$—	$83,755

See accompanying notes to these consolidated financial statements.

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FIRST SOLAR, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. First Solar and Its Business

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 systems 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.

First Solar Holdings, LLC was formed as a Delaware limited liability company in May 2003 to act as the holding company for First Solar, LLC, which was formed in 1999 and renamed First Solar US Manufacturing, LLC in the second quarter of 2006, and other subsidiaries formed during 2003 and later. On February 22, 2006, First Solar Holdings, LLC was incorporated in Delaware as First Solar Holdings, Inc. and, also during the first quarter of 2006, was renamed First Solar, Inc.

Revision of Previously Issued Financial Statements

During the three months ended September 30, 2015, we revised our previously issued financial statements from 2011 to 2014 to properly record a liability associated with an uncertain tax position, including penalties, related to income of a foreign subsidiary along with corresponding adjustments in each successive period for the effect of changes in foreign currency exchange rates associated with the liability. The prior periods also include revisions for previously disclosed errors from 2012 primarily related to "cut-off" of our inventories and balance of systems ("BoS") parts and foreign tax credits. Additional revisions were made for previously identified errors related to sales taxes, use taxes, share-based compensation, and miscellaneous items that were corrected in a period subsequent to the period in which the error originated. As several of these errors affected the estimated costs for systems business sales arrangements accounted for under the percentage-of-completion method, we also recorded adjustments to revenue for the changes in the percentage completion of the affected projects.

We evaluated the aggregate effects of the errors to our previously issued financial statements in accordance with SEC Staff Accounting Bulletins No. 99 and No. 108 and, based upon quantitative and qualitative factors, determined that the errors were not material to our previously issued financial statements. As part of this evaluation, we considered a number of qualitative factors, including, among others, that the errors did not change a net loss into net income or vice versa, did not have an impact on our long-term debt covenant compliance, and did not mask a change in earnings or other trends when considering the overall competitive and economic environment within the industry during the periods. However, the cumulative effect of the errors, including the uncertain tax position matter identified during the three months ended September 30, 2015, was significant to our financial results for the year ended December 31, 2015. Accordingly, we revised our historical financial statements, which resulted in decreases to our accumulated earnings of $36.0 million, $35.0 million, and $32.7 million as of December 31, 2014, 2013, and 2012, respectively.

All financial information presented in the accompanying notes to these consolidated financial statements was revised to reflect the correction of these errors. Periods not presented herein will be revised, as applicable, as they are included in future filings.

The following table presents the effect of the aforementioned revisions on our consolidated balance sheet as of December 31, 2014 (in thousands):

	December 31, 2014		
	As Reported	Adjustment	As Revised
Other liabilities	$284,584	$36,000	$320,584
Total liabilities	1,693,504	36,000	1,729,504
Accumulated earnings	2,279,689	(36,000)	2,243,689
Total stockholders' equity	5,027,487	(36,000)	4,991,487

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The following tables present the effect of the aforementioned revisions on our consolidated statements of operations for the years ended December 31, 2014 and 2013 (in thousands, except per share amounts):

	Year Ended December 31, 2014		
	As Reported	Adjustment	As Revised
Net sales	$3,391,814	$(627)	$3,391,187
Cost of sales	2,564,709	1,537	2,566,246
Gross profit	827,105	(2,164)	824,941
Operating income	424,163	(2,164)	421,999
Foreign currency loss, net	(3,017)	1,556	(1,461)
Other expense, net	(5,203)	718	(4,485)
Income before taxes and equity in earnings of unconsolidated affiliates	431,991	110	432,101
Income tax expense	(30,124)	(1,064)	(31,188)
Net income	396,918	(954)	395,964
Comprehensive income	472,834	(954)	471,880
Basic net income per share	$3.97	$(0.01)	$3.96
Diluted net income per share	$3.91	$(0.01)	$3.90

	Year Ended December 31, 2013		
	As Reported	Adjustment	As Revised
Net sales	$3,308,989	$627	$3,309,616
Cost of sales	2,446,235	(1,251)	2,444,984
Gross profit	862,754	1,878	864,632
Operating income	368,529	1,878	370,407
Foreign currency (loss) gain, net	(259)	1,152	893
Other expense, net	(4,758)	(431)	(5,189)
Income before taxes and equity in earnings of unconsolidated affiliates	378,380	2,599	380,979
Income tax expense	(25,179)	(4,919)	(30,098)
Net income	353,038	(2,320)	350,718
Comprehensive income	317,083	(2,320)	314,763
Basic net income per share	$3.77	$(0.03)	$3.74
Diluted net income per share	$3.70	$(0.03)	$3.67

The following tables present the effect of the aforementioned revisions on our consolidated statements of cash flows for the years ended December 31, 2014 and 2013 (in thousands):

	Year Ended December 31, 2014		
	As Reported	Adjustment	As Revised
Net income	$396,918	$(954)	$395,964
Adjustments to reconcile net income to cash provided by operating activities:			
Remeasurement of monetary assets and liabilities	8,772	(1,556)	7,216
Changes in operating assets and liabilities:			
Accounts receivable, trade, unbilled and retainage	453,826	8,804	462,630
Prepaid expenses and other current assets	(19,947)	(16,858)	(36,805)
Project assets and deferred project costs	141,908	1,139	143,047
Accounts payable	(52,339)	(718)	(53,057)
Income taxes payable	(989)	(142)	(1,131)
Accrued expenses and other liabilities	(452,438)	10,285	(442,153)
Net cash provided by operating activities	680,989	—	680,989

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	Year Ended December 31, 2013		
	As Reported	Adjustment	As Revised
Net income	$353,038	$(2,320)	$350,718
Adjustments to reconcile net income to cash provided by operating activities:			
Share-based compensation	55,079	(494)	54,585
Remeasurement of monetary assets and liabilities	(15,109)	(1,152)	(16,261)
Changes in operating assets and liabilities:			
Accounts receivable, trade, unbilled and retainage	564,964	5,767	570,731
Prepaid expenses and other current assets	109,126	10,115	119,241
Project assets and deferred project costs	(316,022)	(683)	(316,705)
Accounts payable	(93,259)	431	(92,828)
Income taxes payable	36,307	85	36,392
Accrued expenses and other liabilities	(138,937)	(11,749)	(150,686)
Net cash provided by operating activities	856,126	—	856,126

2. Summary of Significant Accounting Policies

Basis of Presentation. These consolidated financial statements include the accounts of First Solar, Inc. and all of its subsidiaries and are prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). We eliminated all intercompany transactions and balances during consolidation. Investments in unconsolidated affiliates in which we have less than a controlling interest are accounted for using the cost or equity method of accounting. Certain prior year balances have been reclassified to conform to the current year presentation. Such reclassifications did not have a material effect on our consolidated financial statements. In addition, the method of reporting the consolidated statements of cash flows was changed from the direct to the indirect method.

Use of Estimates. The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and the accompanying notes. On an ongoing basis, we evaluate our estimates, including those related to percentage-of-completion revenue recognition, inventory valuation, recoverability of project assets and photovoltaic ("PV") solar power systems, estimates of future cash flows from and the economic useful lives of long-lived assets, asset retirement obligations, certain accrued liabilities, income taxes and tax valuation allowances, reportable segment allocations, product warranties and manufacturing excursions, solar module collection and recycling liabilities, and applying the acquisition method of accounting for business combinations and goodwill. Despite our intention to establish accurate estimates and reasonable assumptions, actual results could differ materially from these estimates and assumptions.

Fair Value Measurements. We measure certain financial assets and liabilities at fair value. As of December 31, 2015, our financial assets and liabilities consisted principally of cash and cash equivalents, marketable securities, trade accounts receivable, unbilled accounts receivable and retainage, notes receivable, restricted cash and investments, derivative contracts, accounts payable, income taxes payable, accrued expenses, and debt. Fair value is defined as the price that would be received from the sale of an asset or paid to transfer a liability (i.e., an exit price) on the measurement date in an orderly transaction between market participants in the principal or most advantageous market for the asset or liability. Accounting standards include disclosure requirements around fair values used for certain financial instruments and establish a fair value hierarchy. The hierarchy prioritizes valuation inputs into three levels based on the extent to which inputs used in measuring fair value are observable in the market. Each fair value measurement is reported in one of three levels:

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

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

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

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When available, we use quoted market prices to determine the fair value of an asset or liability. If quoted market prices are not available, we measure fair value using valuation techniques that use, when possible, current market-based or independently-sourced market parameters, such as interest rates and currency rates.

Cash and Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less at the time of purchase to be cash equivalents.

Marketable Securities – Current and Noncurrent and Restricted Investments. We determine the classification of our marketable securities and restricted investments at the time of purchase and reevaluate such designation at each balance sheet date. We have classified our marketable securities and restricted investments as available-for-sale. These marketable securities and restricted investments are recorded at fair value and unrealized gains and losses are recorded to “Accumulated other comprehensive income” until realized. Realized gains and losses on sales of these marketable securities and restricted investments are reported in earnings, computed using the specific identification method.

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

All of our available-for-sale marketable securities and restricted investments are subject to a periodic impairment review. We consider a marketable security or restricted investment to be impaired when its fair value is less than its carrying cost, in which case we would further review the marketable security or restricted investment to determine if it is other-than-temporarily impaired. When we evaluate a marketable security or restricted investment for other-than-temporary impairment, we review factors such as the length of time and the extent to which its fair value has been below its cost basis, the financial conditions of the issuer and any changes thereto, our intent to sell, and whether it is more likely than not that we will be required to sell the marketable security or restricted investment before we have recovered its cost basis. If a marketable security or restricted investment were other-than-temporarily impaired, we would write it down through “Other expense, net” to its impaired value and establish that value as a new cost basis for the marketable security or restricted investment.

Derivative Instruments. We recognize derivative instruments on our consolidated balance sheets at their fair value. On the date that we enter into a derivative contract, we designate the derivative instrument as a fair value hedge, a cash flow hedge, a hedge of a net investment in a foreign operation, or a derivative instrument that will not be accounted for using hedge accounting methods. As of December 31, 2015 and 2014, all of our derivative instruments were designated either as cash flow hedges or as derivative instruments not accounted for using hedge accounting methods.

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

We formally document all relationships between hedging instruments and the underlying hedged items, as well as our risk-management objective and strategy for undertaking various hedge transactions, at the inception of the hedge. We

support all of our derivatives with documentation specifying the underlying exposure being hedged. We also formally assess (both at the hedge's inception and on an ongoing basis) whether the derivative instruments that we use in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of the underlying hedged items and whether those derivatives are expected to remain highly effective in future periods. When we determine that a derivative instrument is not highly effective as a hedge, we discontinue hedge accounting prospectively. In all situations in which we discontinue hedge accounting and the derivative instrument remains outstanding, we will carry the derivative instrument at its fair value on our consolidated balance sheets and recognize subsequent changes in its fair value in our current period earnings.

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Receivables and Allowance for Doubtful Accounts. The carrying value of our receivables, net of the allowance for doubtful accounts, represents their estimated net realizable value. We estimate our allowance for doubtful accounts based on historical collection trends, the age of outstanding receivables, and existing economic conditions. If events or changes in circumstances indicate that specific receivable balances may be impaired, further consideration is given to the collectability of those balances, and the allowance is adjusted accordingly. Past-due receivable balances are written off when our internal collection efforts have been unsuccessful.

Retainage. Certain of our engineering, procurement, and construction ("EPC") contracts for solar power plants we build contain retainage provisions. Retainage refers to the portion of the contract price earned by us for work performed, but held for payment by our customer as a form of security until we reach certain construction milestones. We consider whether collectability of such retainage is reasonably assured in connection with our overall assessment of the collectability of amounts due or that will become due under our EPC contracts. Retainage expected to be collected within 12 months is classified within "Accounts receivable, unbilled and retainage" on the consolidated balance sheets. Retainage expected to be collected after 12 months is classified within "Other assets" on the consolidated balance sheets. After we have met the EPC contract requirements to bill for retainage, we will reclassify such amounts to "Accounts receivable trade, net."

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

We regularly review the cost of inventories, including noncurrent inventories, against their estimated net realizable value and record write-downs if any inventories have costs in excess of their net realizable values. We also regularly evaluate the quantities and values of our inventories, including noncurrent inventories, in light of current market conditions and market trends, among other factors, and record write-downs for any quantities in excess of demand and for any new obsolescence. This evaluation considers the use of modules in our systems business, historical usage, expected demand, anticipated sales prices, desired strategic raw material requirements, new product development schedules, the effect new products might have on the sale of existing products, product obsolescence, customer concentrations, product merchantability, and other factors. Market conditions are subject to change, and actual consumption of our inventory could differ from forecasted demand.

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

Balance of Systems Parts. BoS parts represent mounting, electrical, and other construction parts purchased for PV solar power systems to be constructed or currently under construction, which we hold title to and are not yet installed in a system. Such construction parts include items such as posts, tilt brackets, tables, harnesses, combiner boxes, inverters, cables, tracker equipment, and other parts we may purchase or assemble for the systems we construct. We carry these parts at the lower of cost or net realizable value, with such value being based primarily on recoverability through installation in a solar power system or recoverability through a sales agreement. BoS parts do not include any solar modules that we manufacture.

Asset Impairments. We assess long-lived assets classified as "held and used," including our property, plant and equipment, project assets, and PV solar power systems for impairment whenever events or changes in business

circumstances arise that may indicate that the carrying amount of our long-lived assets may not be recoverable. These events and changes can include significant current period operating losses or negative cash flows associated with the use of a long-lived asset, or group of assets, combined with a history of such factors, significant changes in the manner of use of the assets, and current expectations that it is more likely than not that a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. For purposes of recognition and measurement of an impairment loss, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. When impairment indicators are present, we compare undiscounted future cash flows, including the eventual disposition of the asset group at market value, to the asset group's carrying value to determine if the asset group is recoverable. If the carrying values are in excess of undiscounted expected future cash flows, we measure any impairment by comparing the fair value of the asset or asset group to its carrying value. Fair value is generally determined by considering (i) internally developed discounted projected cash flow analysis of the asset or asset group, (ii) actual third-party valuations, and/or (iii) information available regarding the current market for similar assets. If the fair value of an asset or asset group is determined to be less than the carrying amount of the asset or asset group, an impairment in the amount of the difference is recorded in the period that the impairment indicator

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occurs and is included in “Restructuring and asset impairments” in our consolidated statement of operations. Estimating future cash flows requires significant judgment, and projections may vary from the cash flows eventually realized, which could impact our ability to accurately assess whether an asset has been impaired.

We consider a long-lived asset to be abandoned after we have ceased use of such asset and we have no intent to use or re-purpose the asset in the future.

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

We assess held for sale long-lived assets for impairment whenever events or circumstances arise that may indicate that the carrying amount of our held for sale long-lived assets may not be recoverable. Depreciation and amortization expense is not recorded on assets once they are classified as assets held for sale.

Property, Plant and Equipment. We report our property, plant and equipment at cost, less accumulated depreciation. Cost includes the price paid to acquire or construct the assets, required installation costs, interest capitalized during the construction period, and any expenditure that substantially adds to the value of or substantially extends the useful life of an existing asset. We expense repair and maintenance costs at the time we incur them.

We begin depreciation for such assets when they are placed into service. We consider an asset to be placed into service when the asset is both in the location and condition for its intended use.

We compute depreciation expense using the straight-line method over the estimated useful lives of assets, as presented in the table below. We depreciate leasehold improvements over the shorter of their estimated useful lives or the remaining term of the lease. The estimated useful life of an asset is reassessed whenever applicable facts and circumstances indicate a change in the estimated useful life of such asset has occurred.

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

Idle Property, Plant and Equipment. For property, plant and equipment that has been placed into service, but is subsequently idled temporarily, we continue to record depreciation expense during the idle period. We adjust the estimated useful lives of the idled assets if the estimated useful lives have changed. At December 31, 2015, the current net book value of our temporarily idled equipment was $4.0 million.

PV Solar Power Systems. PV solar power systems represent solar systems that we may temporarily own and operate after being placed into service. We report our PV solar power systems at cost, less accumulated depreciation. When we are entitled to incentive tax credits for our systems, we reduce the related carrying value of the assets by the

amount of the tax credits, which reduces future depreciation. Any energy generated by the systems prior to being placed into service is accounted for as a reduction in the related carrying value of the assets. We begin depreciation for PV solar power systems when they are placed into service. We compute depreciation expense for the systems using the straight-line method over the shortest of the term of the related power purchase agreement ("PPA"), the lease on the land, or 25 years. Our current PV solar power systems have estimated useful lives ranging from 15 to 25 years.

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We sell energy generated by our PV solar power systems under PPAs or on an open contract basis. We recognize revenue from such sales at the time the energy is delivered to our customers or the grid (in the case of merchant power). For the year ended December 31, 2015, we recognized revenue from our PV solar power systems of $9.8 million.

Asset Retirement Obligations. We develop, construct, and operate certain project assets and PV solar power systems under power purchase or other agreements that include a requirement for the removal of the assets at the end of the term of the agreement. We recognize asset retirement obligations ("AROs") at fair value in the period in which they are incurred, and the carrying amounts of the related project assets or PV solar power systems are correspondingly increased. AROs represent the present value of the expected costs and timing of the related decommissioning activities. At December 31, 2015 and 2014, our AROs totaled $15.9 million and $6.7 million, respectively.

Internal-Use Software Costs. We capitalize the costs related to computer software obtained or developed for internal use. Software obtained for internal use has generally been enterprise-level business and finance software that we customize to meet our specific operational requirements. The capitalized costs are amortized on a straight-line basis over the estimated useful life of the software, ranging from 3 to 7 years.

Interest Capitalization. We capitalize interest as part of the historical cost of acquiring or constructing certain assets during the period of time required to place the assets into service or sell the assets to customers. These assets include property, plant and equipment and PV solar power system development and construction costs that we have capitalized as project assets. Interest capitalized for property, plant and equipment is depreciated over the estimated useful life of the related assets when they are placed into service. We charge interest capitalized for project assets to cost of sales when such assets are sold and we have met all revenue recognition criteria. We capitalize interest to the extent that expenditures to acquire, construct, or develop an asset have occurred and interest cost has been incurred. We cease capitalization of interest for projects in development or under construction if the projects are substantially complete or if we receive any payment for or have sold such projects.

Project Assets. Project assets primarily consist of costs relating to solar power projects in various stages of development that are capitalized prior to entering into a definitive sales agreement for the projects, including projects that have begun commercial operation under PPAs and are actively marketed and intended to be sold. These project related costs include costs for land, development, and construction of a PV solar power system. Development costs may include legal, consulting, permitting, interconnection, and other similar costs. Once we enter into a definitive sales agreement, we reclassify project assets to deferred project costs on our consolidated balance sheets until the sale is completed and we have met all of the criteria to recognize the sale as revenue, which is typically subject to real estate revenue recognition requirements. We expense project assets and deferred project costs to cost of sales after each respective project is sold to a customer and all revenue recognition criteria have been met (matching the expensing of costs to the underlying revenue recognition method). In addition, we present all expenditures related to the development and construction of project assets or deferred project costs, whether fully or partially owned, as a component of cash flows from operating activities. We classify project assets as noncurrent due to the nature of solar power projects (long-lived assets) and the time required to complete all activities to develop, construct, and sell projects, which is typically longer than 12 months.

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

selling price of the project to decrease. If a project is not considered recoverable, we impair the respective project assets and adjust the carrying value to the estimated recoverable amount, with the resulting impairment recorded within operating expenses.

Deferred Project Costs. Deferred project costs represent (i) costs that we capitalize as project assets for arrangements that we account for as real estate transactions after we have entered into a definitive sales arrangement, but before the sale is completed or before we have met all criteria to recognize the sale as revenue, (ii) recoverable pre-contract costs that we capitalize for arrangements accounted for as long-term construction contracts prior to entering into a definitive sales agreement, or (iii) costs that we capitalize for arrangements accounted for as long-term construction contracts after we have signed a definitive sales agreement, but before all revenue recognition criteria have been met. We classify deferred project costs as current if completion of the sale and the meeting of all revenue recognition criteria are expected within the next 12 months.

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If a project is completed and begins commercial operation prior to entering into or the closing of a sales arrangement, the completed project will remain in project assets or deferred project costs until the earliest of the closing of the sale of such project or our decision to temporarily hold such project. Any income generated by a project while it remains within project assets or deferred project costs is accounted for as a reduction to our basis in the project, which at the time of sale and meeting all revenue recognition criteria will be recorded within cost of sales.

The following table summarizes the balance sheet classification of project assets and deferred project costs:

Milestone	Arrangements Accounted for under ASC 360-20 (Real Estate Sales)	Arrangements Accounted for under ASC 605-35 (Long-Term Construction Contracts)
Execution of a definitive sales arrangement, but all revenue recognition criteria are not yet met	Deferred project costs	Deferred project costs
Pre-execution of a definitive sales arrangement	Project asset	Deferred project costs (recoverable pre-contract costs)

Accounts Receivable, Unbilled. Accounts receivable, unbilled represents revenue that has been recognized in advance of billing the customer, which is common for long-term construction contracts. For example, we recognize revenue from contracts for the construction and sale of PV solar power systems, which include the sale of such assets over the construction period using applicable accounting methods. One such method is the percentage-of-completion method, which recognizes revenue and gross profit as work is performed based on the relationship between actual costs incurred compared to the total estimated costs for the contract. Under this accounting method, revenue could be recognized under applicable revenue recognition criteria in advance of billing the customer, resulting in an amount recorded to “Accounts receivable, unbilled and retainage.” Once we meet the billing criteria under a construction contract, we bill our customer accordingly and reclassify the “Accounts receivable, unbilled and retainage” to “Accounts receivable trade, net.” Billing requirements vary by contract but are generally structured around completion of certain construction milestones.

Billings in Excess of Costs and Estimated Earnings. The liability “Billings in excess of costs and estimated earnings” represents billings made or payments received in excess of revenue recognized on contracts accounted for under the percentage-of-completion method. Typically, billings are made based on the completion of certain construction milestones as provided for in the sales arrangement, and the timing of revenue recognition may be different from when we can bill or collect from a customer.

Payments and Billings for Deferred Project Costs. The liability “Payments and billings for deferred project costs” represents customer payments received or customer billings made under the terms of solar power project related sales contracts for which all revenue recognition criteria for real estate transactions have not yet been met. The associated solar power project costs are included within deferred project costs. We classify such amounts as current or noncurrent depending on when all revenue recognition criteria are expected to be met, consistent with the classification of the associated deferred project costs.

Deferred Revenue. Deferred revenue consists of payments received in advance of meeting all revenue recognition criteria (with the exception of payments and billings for deferred project costs) for the sale of solar modules or services performed under our O&M agreements. We recognize deferred revenue as net sales after all revenue recognition criteria are met.

Business Combinations. We account for business acquisitions using the acquisition method of accounting and record intangible assets separate from goodwill. Intangible assets are recorded at fair value based on estimates as of the date of acquisition. Goodwill is recorded as the residual amount of the purchase price consideration less the fair value assigned to the individual assets acquired and liabilities assumed as of the date of acquisition. We charge acquisition

related costs that are not part of the purchase price consideration to general and administrative expense as they are incurred. These costs typically include transaction and integration costs, such as legal, accounting, and other professional fees. Contingent consideration, which represents an obligation of the acquirer to transfer additional assets or equity interests to the former owner as part of the exchange if specified future events occur or conditions are met, is accounted for at fair value either as a liability or as equity depending on the terms of the acquisition agreement.

Goodwill. Goodwill represents the excess of the purchase price of acquired businesses over the estimated fair value assigned to the individual assets acquired and liabilities assumed. We do not amortize goodwill, but instead are required to test goodwill for impairment at least annually. If necessary, we would record any impairment in accordance with Accounting Standards Codification (“ASC”) 350, Intangibles – Goodwill and Other. We perform impairment tests between scheduled annual tests in the fourth quarter if facts and circumstances indicate that it is more likely than not that the fair value of a reporting unit that has goodwill is less than its carrying value.

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

The first step in a two-step impairment test is the comparison of the fair value of a reporting unit with its carrying amount, including goodwill. Our reporting units consist of our fully integrated systems business, cadmium telluride ("CdTe") module manufacturing business, and our crystalline silicon module manufacturing business from our TetraSun acquisition in 2013. In accordance with the authoritative guidance over fair value measurements, we define the fair value of a reporting unit as the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. We primarily use the income approach methodology of valuation, which includes the discounted cash flow method, to estimate the fair values of our reporting units.

Significant management judgment is required when estimating the fair value of our reporting units including the forecasting of future operating results and the selection of discount and expected future growth rates that we use in determining the projected cash flows. If the estimated fair value of a reporting unit exceeds its carrying value, goodwill is not impaired and no further analysis is required.

If the carrying value of a reporting unit exceeds its estimated fair value in the first step, then we are required to perform the second step of the impairment test. In this step, we assign the fair value of the reporting unit calculated in step one to all of the assets and liabilities of the reporting unit, as if a market participant just acquired the reporting unit in a business combination. The excess of the fair value of the reporting unit determined in the first step of the impairment test over the total amount assigned to the assets and liabilities in the second step of the impairment test represents the implied fair value of goodwill. If the carrying value of a reporting unit's goodwill exceeds the implied fair value of goodwill, we would record an impairment loss equal to the difference. If there is no such excess, then all goodwill for a reporting unit is considered impaired.

See Note 6 "Goodwill and Intangible Assets" for additional information on our goodwill impairment tests.

In-Process Research and Development. In-process research and development ("IPR&D") is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When the IPR&D project is complete, it is reclassified as a definite-lived intangible asset and amortized over its estimated useful life. If an IPR&D project is abandoned, we will record a charge for the value of the related intangible asset to our consolidated statement of operations in the period it is abandoned.

Product 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 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

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root cause of the issue is due to module performance; we then have the option of either repairing or replacing the covered modules, providing supplemental modules, or making a cash payment. Consistent with our limited module power output warranty, when we elect to satisfy a warranty claim by providing replacement or supplemental modules under the system level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

In addition to our limited solar module warranty described above, 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.

When we recognize revenue for module or systems sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations. We make and revise these estimates based primarily on the number of our solar modules under warranty installed at customer locations, our historical experience with warranty claims, our monitoring of field installation sites, our internal testing of and the expected future performance of our solar modules and BoS components, and our estimated per-module replacement costs.

From time to time, we have taken remediation actions with respect to affected modules beyond our limited warranties, 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 obligations could be material to our consolidated statement of operations if we commit to any such remediation actions.

Accrued Solar Module Collection and Recycling Liability. We recognize expense at the time of sale for the estimated cost of our future obligations for collecting and recycling solar modules covered by our collection and recycling program. See Note 14 “Solar Module Collection and Recycling Liability” for further information.

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

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

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

Comprehensive Income. Our comprehensive income consists of our net income, the effects on our consolidated financial statements of translating the financial statements of our subsidiaries that operate in foreign currencies, the unrealized gains or losses on available-for-sale marketable securities and restricted investments, and the unrealized gains or losses on derivative instruments that qualify for and have been designated as cash flow hedges. We present our comprehensive income in the consolidated statements of comprehensive income. Our "Accumulated other comprehensive income" is presented as a component of stockholders' equity in our consolidated balance sheets.

Per Share Data. Basic net income per share is based on the weighted effect of all common shares outstanding and is calculated by dividing net income by the weighted average number of common shares outstanding during the period. Diluted net income per share is based on the weighted effect of all common shares and dilutive potential common shares outstanding and is calculated by dividing net income by the weighted average number of common shares and dilutive potential common shares outstanding during the period.

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Revenue Recognition – Systems Business. We recognize revenue for arrangements entered into by our systems business generally using two revenue recognition models, following the guidance in either ASC 605-35, Construction-Type and Production-Type Contracts, or ASC 360-20, Real Estate Sales, for arrangements which include land or land rights.

Systems business sales arrangements in which we construct a PV solar power system for a specific customer on land that is controlled by the customer, and has not been previously controlled by First Solar, are accounted for under ASC 605-35. For such sales arrangements, we use the percentage-of-completion method, as described further below, using actual costs incurred over total estimated costs to develop and construct the system (including module costs) as our standard accounting policy.

Systems business sales arrangements in which we convey control of land or land rights as part of the transaction are accounted for under ASC 360-20. Accordingly, we use one of the following revenue recognition methods, based upon an evaluation of the substance and form of the terms and conditions of such real estate sales:

(i) We apply the percentage-of-completion method, as further described below, to certain real estate sales arrangements in which we convey control of land or land rights, when a sale has been consummated, we have transferred the usual risks and rewards of ownership to the buyer, the initial and continuing investment criteria have been met, we have the ability to estimate our costs and progress toward completion, and all other revenue recognition criteria have been met. When evaluating whether the usual risks and rewards of ownership have transferred to the buyer, we consider whether we have or may be contingently required to have any prohibited forms of continuing involvement with the project pursuant to ASC 360-20. The initial and continuing investment requirements, which demonstrate a buyer's commitment to honor its obligations for the sales arrangement, can typically be met through the receipt of cash or an irrevocable letter of credit from a highly creditworthy lending institution.

(ii) Depending on whether the initial and continuing investment requirements have been met and whether collectability from the buyer is reasonably assured, we may align our revenue recognition and release of project assets or deferred project costs to cost of sales with the receipt of payment from the buyer if the sale has been consummated and we have transferred the usual risks and rewards of ownership to the buyer.

For any systems business sales arrangements containing multiple deliverables (including our solar modules) not required to be accounted for under ASC 605-35 (long-term construction contracts) or ASC 360-20 (real estate), we analyze each activity within the sales arrangement to adhere to the separation guidelines of ASC 605-25 for multiple-element arrangements. We allocate revenue for any transactions involving multiple elements to each unit of accounting based on its relative selling price and recognize revenue for each unit of accounting when all revenue recognition criteria for a unit of accounting have been met.

Revenue Recognition – Percentage-of-Completion. In applying the percentage-of-completion method, we use the actual costs incurred relative to the total estimated costs (including module costs) in order to determine the progress towards completion and calculate the corresponding amount of revenue and profit to recognize. Costs incurred include direct materials, solar modules, labor, subcontractor costs, and those indirect costs related to contract performance, such as indirect labor and supplies. We recognize direct material and solar module costs as incurred when the direct materials and solar modules have been installed in the project. When contracts specify that title to direct materials and solar modules transfers to the customer before installation has been performed, we will not recognize revenue or the associated costs until those materials are installed and have met all other revenue recognition requirements. We consider direct materials and solar modules to be installed when they are permanently placed or affixed to a PV solar power system as required by engineering designs. Solar modules manufactured and owned by us that will be used in our systems remain within inventory until such modules are installed in a system.

The percentage-of-completion method of revenue recognition requires us to make estimates of net contract revenues and costs to complete our projects. In making such estimates, management judgments are required to evaluate significant assumptions including the amount of net contract revenues, the cost of materials and labor, expected labor productivity, the impact of potential variances in schedule completion, and the impact of any penalties, claims, change orders, or performance incentives.

If estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of the revisions to estimates related to net contract revenues and costs to complete contracts, including penalties, claims, change orders, performance incentives, anticipated losses, and others are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated. The effect of the changes on future periods are recognized as if the revised estimates had been used since revenue was initially recognized under the contract. Such revisions could occur in any reporting period, and the effects may be material depending on the size of the contracts or the changes in estimates.

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Revenue Recognition – Operations and Maintenance. Our O&M revenue is billed and recognized as services are performed. Costs of these revenues are expensed in the period in which they are incurred.

Revenue Recognition – Components Business. Our components business sells solar modules directly to third-party solar power system integrators and operators. We recognize revenue for module sales when persuasive evidence of an arrangement exists, delivery of the modules has occurred and title and risk of loss have passed to the customer, the sales price is fixed or determinable, and the collectability of the resulting receivable is reasonably assured. Under this policy, we record a trade receivable for the selling price of our module and reduce inventory for the cost of goods sold when delivery occurs in accordance with the terms of the sales contract. Our customers typically do not have extended payment terms or rights of return for our products.

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

Restructuring and Exit Activities. We record costs associated with exit activities such as employee termination benefits that represent a one-time benefit when management approves and commits to a plan of termination, or over the future service period, if any. Other costs associated with exit activities may include contract termination costs, including costs related to leased facilities to be abandoned or subleased, and facility and employee relocation costs.

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

Share-Based Compensation. We recognize share-based compensation expense on the estimated grant-date fair value of equity instruments issued as compensation to employees over the requisite service period, which is generally four years. The share-based compensation expense that we recognize is based on the number of awards expected to ultimately vest; therefore, the amounts used to determine share-based compensation expense have been reduced for estimated forfeitures. We estimate the number of awards that we expect to vest at the time the awards are granted and revise those estimates, if necessary, in subsequent periods. We also estimate the number of awards that we expect to vest based on our historical experience with forfeitures, giving consideration to whether future forfeiture behavior might be expected to differ from past behavior. We recognize compensation expense for awards with graded vesting schedules on a straight-line basis over the requisite service periods for each separately vesting portion of the awards as if each award was in substance multiple awards.

Our forfeiture rate assumptions, including estimates as to which share-based awards will ultimately vest, require judgment, and to the extent actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period of change and could be materially different from share-based compensation expense recorded in prior periods. Additionally, when an associate’s employment is terminated, all previously unvested awards granted to such associate are forfeited, which results in a benefit to share-based compensation expense in the period of such associate’s termination equal to the cumulative expense recorded through the termination date for such forfeited unvested awards.

Shipping and Handling Costs. We classify shipping and handling costs as a component of cost of sales. We record customer payments of shipping and handling costs as a component of net sales.

Taxes Collected from Customers and Remitted to Governmental Authorities. We do not include tax amounts collected from customers in sales transactions as a component of net sales.

Self-Insurance. We are self-insured for certain healthcare benefits provided to our U.S. employees. The liability for the self-insured benefits is limited by the purchase of stop-loss insurance. The stop-loss coverage provides payment for claims exceeding$0.2 million per covered person for any given year. Accruals for losses are made based on our claim experience and estimates based on historical data. Actual losses may differ from accrued amounts. Should actual losses exceed the amounts expected and, as a result, the recorded liabilities are determined to be insufficient, an additional expense will be recorded.

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Ventures and Variable Interest Entities. In the normal course of business we establish wholly owned project companies which may be considered variable interest entities ("VIEs"). We consolidate wholly owned variable interest entities when we are considered the primary beneficiary of such entities. Additionally, we have, and may in the future form, joint venture type arrangements, including partnerships and partially owned limited liability companies or similar legal structures, with one or more third parties primarily to develop, construct, own, and/or sell solar power projects. These types of ventures are core to our business and long-term strategy related to providing PV solar generation solutions using our modules to key geographic markets. We analyze all of our ventures and classify them into two groups: (i) ventures that must be consolidated because they are either not VIEs and we hold a majority voting interest, or because they are VIEs and we are the primary beneficiary and (ii) ventures that do not need to be consolidated and are accounted for under either the cost or equity method of accounting because they are either not VIEs and we hold a minority voting interest, or because they are VIEs and we are not the primary beneficiary.

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

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

Cost and Equity Method Investments. We account for our unconsolidated ventures using either the cost or equity method of accounting depending upon whether we have the ability to exercise significant influence over the venture. As part of this evaluation, we consider our participating and protective rights in the venture as well as its legal form. We record our cost method investments at their historical cost and subsequently record any dividends received from the net accumulated earnings of the investee as income. Dividends received in excess of earnings are considered a return of investment and are recorded as reductions in the cost of the investment. We use the equity method of accounting for our investments when we have the ability to significantly influence the operations or financial activities of the investee. We record our equity method investments at cost and subsequently adjust their carrying amount each period for our share of the earnings or losses of the investee and other adjustments required by the equity method of accounting. Dividends received from our equity method investments are recorded as reductions in the cost of such investments. We monitor our investments, which are included in "Investments in unconsolidated affiliates and joint ventures" in the accompanying consolidated balance sheets, for impairment and record reductions in their carrying values if the carrying amount of the investment exceeds its fair value. An impairment charge is recorded when such impairment is deemed to be other-than-temporary. To determine whether an impairment is other-than-temporary, we consider our ability and intent to hold the investment until the carrying amount is fully recovered. Circumstances that indicate an other-than-temporary impairment may have occurred include factors such as decreases in quoted market prices or declines in the operations of the investee. The evaluation of an investment for potential impairment requires us to exercise significant judgment and to make certain assumptions. The use of different judgments and assumptions could result in different conclusions. No impairment losses were recorded related to our cost and equity method investments during the year ended December 31, 2015. We recorded impairment losses related to our cost and equity method investments of $7.1 million and $0.2 million during the years ended December 31, 2014 and 2013, respectively.

3. Recent Accounting Pronouncements

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers (Topic 606), to clarify the principles of recognizing revenue and create common revenue recognition guidance between U.S. GAAP and International Financial Reporting Standards. An entity has the option to apply the provisions of ASU 2014-09 either retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of initially applying this standard recognized at the date of initial application. ASU 2014-09 is effective for fiscal years and interim periods within those years beginning after December 15, 2017, and early adoption is permitted for periods beginning after December 15, 2016. We are currently evaluating our method of adoption and the impact ASU 2014-09 will have on our consolidated financial statements and associated disclosures.

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In February 2015, the FASB issued ASU 2015-02, Consolidation (Topic 810) – Amendments to the Consolidation Analysis. ASU 2015-02 modifies existing consolidation guidance related to (i) limited partnerships and similar legal entities, (ii) the evaluation of variable interests for fees paid to decision makers or service providers, (iii) the effect of fee arrangements and related parties on the primary beneficiary determination, and (iv) certain investment funds. These changes are expected to limit the number of consolidation models and place more emphasis on risk of loss when determining a controlling financial interest. ASU 2015-02 is effective for fiscal years and interim periods within those years beginning after December 15, 2015. We do not expect the adoption of ASU 2015-02 to have a significant impact on our consolidated financial statements and associated disclosures.

In April 2015, the FASB issued ASU 2015-03, Interest – Imputation of Interest (Subtopic 835-30) – Simplifying the Presentation of Debt Issuance Costs. ASU 2015-03 simplifies the presentation of debt issuance costs by requiring such costs to be presented in the balance sheet as a reduction to the carrying amount of the corresponding debt liability, consistent with debt discounts, rather than as a deferred charge. The adoption of ASU 2015-03 in the second quarter of 2015 resulted in reclassifications of $0.5 million in unamortized debt issuance costs from “Prepaid expenses and other current assets” to “Current portion of long-term debt” and $2.9 million in unamortized debt issuance costs from “Other assets” to “Long-term debt” on our consolidated balance sheet as of December 31, 2014.

In July 2015, the FASB issued ASU 2015-11, Inventory (Topic 330) – Simplifying the Measurement of Inventory. ASU 2015-11 simplifies the subsequent measurement of inventory by replacing the current lower of cost or market test with a lower of cost or net realizable value test. The adoption of ASU 2015-11 in the fourth quarter of 2015 did not have a significant impact on the subsequent measurement of inventory included in our consolidated financial statements.

In November 2015, the FASB issued ASU 2015-17, Income Taxes (Topic 740) – Balance Sheet Classification of Deferred Taxes. ASU 2015-17 simplifies the presentation of deferred taxes by requiring all deferred tax assets and liabilities to be classified as noncurrent. The adoption of ASU 2015-17 in the fourth quarter of 2015 resulted in reclassifications of $77.9 million and $91.6 million from current “Deferred tax assets, net” to noncurrent “Deferred tax assets, net” on our consolidated balance sheets as of December 31, 2015 and 2014, respectively.

In January 2016, the FASB issued ASU 2016-01, Financial Instruments – Overall (Subtopic 825-10) – Recognition and Measurement of Financial Assets and Financial Liabilities. ASU 2016-01 changes how entities measure certain equity investments and present changes in the fair value of financial liabilities measured under the fair value option that are attributable to their own credit. The guidance also changes certain disclosure requirements and other aspects of current U.S. GAAP. ASU 2016-01 is effective for fiscal years and interim periods within those years beginning after December 15, 2017, and certain provisions of the guidance may be early adopted. We are currently evaluating the impact ASU 2016-01 will have on our consolidated financial statements and associated disclosures.

4. Asset Impairments

In October 2013, we entered into an agreement to sell our facility in Mesa, Arizona. The facility consisted of land, a building, and certain fixtures and improvements. The facility housed our O&M capabilities as well as certain equipment and inventory. The facility was originally designed to house CdTe PV module manufacturing lines; however, we never commissioned manufacturing at the facility. As a result of the sales agreement, we recognized a $56.5 million asset impairment charge, which lowered the carrying value of the facility to its fair value, less costs to sell. During the fourth quarter of 2013, we received cash proceeds, net of costs to sell, of $115.0 million in connection with the Mesa sales agreement. The transaction was completed during the first quarter of 2014.

As a result of our February 2012 manufacturing restructuring, our Vietnam facility was made available for sale, and during 2013, we expanded our marketing strategy for the facility to include potential strategic and financial buyers. As

a result of this change, we determined that the estimated fair value of our Vietnam facility, including the related equipment, was less than its carrying value and recorded an asset impairment charge of $25.2 million to lower the carrying value of the facility to its estimated fair value, less costs to sell. We continue to actively market the facility at a price that is at or above the current carrying value of the assets. Impairment charges recognized for our Mesa and Vietnam facilities are presented in “Restructuring and asset impairments” on the consolidated statements of operations.

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5. Business Acquisitions

General Electric

In August 2013, we acquired all of the CdTe PV specific intellectual property assets and CdTe solar manufacturing processes ("GE Intellectual Property") of General Electric Company ("GE") pursuant to a Master Transaction Agreement and an Intellectual Property Purchase Agreement (the "Agreements"), by and between First Solar and GE and certain of their subsidiaries. Pursuant to the Agreements, First Solar received the GE Intellectual Property and GE received 1,750,000 shares of First Solar common stock, which had a market value of $83.8 million on August 5, 2013. The GE Intellectual Property included trade secrets, technology, business and technical information and know-how, databases, and other confidential and proprietary information as well as solar manufacturing processes and protocols. The combination of the GE Intellectual Property and our existing manufacturing capacity is expected to further advance CdTe technology and achieve a more rapid increase in module efficiency.

In connection with applying the acquisition method of accounting, $73.7 million of the purchase price consideration was assigned to an IPR&D intangible asset to be amortized over its useful life upon successful completion of the project, and $10.1 million was assigned to goodwill. The underlying technology and IPR&D acquired from GE focuses on increasing the efficiency of CdTe solar modules while at the same time lowering production and installation costs. We valued the acquired IPR&D using the reproduction cost method and the income approach, as appropriate. The income approach reflected the present value of forecasted cash flows derived from the incremental module efficiency benefits. We integrated the acquired technology into our manufacturing process during 2015 as part of our efforts to increase the efficiency of our solar modules.

The pro forma effect of this all-stock acquisition was not material to our historical consolidated balance sheets, results of operations, or cash flows. Substantially all of the goodwill and intangible assets recorded for this acquisition are deductible for tax purposes.

TetraSun

In April 2013, we acquired 100% of the stock not previously owned by us of TetraSun, Inc. ("TetraSun"), a development stage company with high-efficiency crystalline silicon technology that is expected to provide improvements in performance relative to conventional crystalline silicon solar modules. This all-cash acquisition was not material to our historical consolidated balance sheets, results of operations, or cash flows. We have included the financial results of TetraSun in our consolidated financial statements from the date of acquisition.

In connection with applying the acquisition method of accounting, $39.1 million of the purchase price consideration was assigned to an IPR&D intangible asset to be amortized over its useful life upon successful completion of the project, and $6.1 million was assigned to goodwill. The acquired IPR&D involves a project to develop a lower cost and higher efficiency crystalline silicon cell. We valued the IPR&D using the multi-period excess earnings method under the income approach. The method reflected the present value of the projected cash flows that are expected to be generated by the IPR&D less charges representing the contribution of other assets to those cash flows. During 2015, we fully integrated the acquired technology into our manufacturing processes and began selling crystalline silicon modules with proprietary high-power density, mono-crystalline technology.

Solar Chile

In January 2013, we acquired a 100% ownership interest in Solar Chile S.A. ("Solar Chile"), a Chilean-based solar project development company with substantially all of its assets being a portfolio of early to mid-stage utility-scale PV solar power projects in northern Chile, in an all-cash transaction, which was not material to our historical consolidated

balance sheets, results of operations, or cash flows. We have included the financial results of Solar Chile in our consolidated financial statements from the date of acquisition. In connection with applying the acquisition method of accounting, $3.4 million was assigned to goodwill.

In connection with the TetraSun and Solar Chile acquisitions, we agreed to pay additional amounts to sellers contingent upon achievement by the acquired businesses of certain negotiated goals, such as targeted project and module shipment volume milestones. We recognized $2.5 million and $4.9 million of current liabilities and $4.9 million and $14.7 million of long-term liabilities for these contingent obligations based on their estimated fair value as of December 31, 2015 and 2014, respectively. During 2015, we made $2.5 million of payments for contingent consideration related to these acquisitions and recorded an additional adjustment to reduce the associated liabilities by $10.0 million.

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6. Goodwill and Intangible Assets

Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2015 and 2014 were as follows (in thousands):

Reporting Unit	Balance at December 31, 2014	Acquisitions	Balance at December 31, 2015
CdTe components	$403,420	$—	$403,420
Crystalline silicon components	6,097	—	6,097
Systems	68,833	—	68,833
Accumulated impairment losses	(393,365)	—	(393,365)
Total	$84,985	$—	$84,985

Reporting Unit	Balance at December 31, 2013	Acquisitions	Balance at December 31, 2014
CdTe components	$403,420	$—	$403,420
Crystalline silicon components	6,097	—	6,097
Systems	68,833	—	68,833
Accumulated impairment losses	(393,365)	—	(393,365)
Total	$84,985	$—	$84,985

At December 31, 2015 and 2014, accumulated impairment losses related entirely to the CdTe components reporting unit.

2015 Goodwill Impairment Testing

We performed our annual impairment analysis in the fourth quarter of 2015. ASC 350-20 provides that prior to performing the traditional two-step goodwill impairment test, companies are permitted to perform a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value to determine whether it is necessary to perform the two-step goodwill impairment test. The qualitative impairment test considers various factors including macroeconomic conditions, industry and market considerations, cost factors, the overall financial performance of a reporting unit, and any other relevant events affecting the entity or its reporting units. We performed a qualitative assessment for each of our reporting units and concluded that it was not more likely than not that the fair value of each reporting unit was less than its carrying amount. Accordingly, the two-step goodwill impairment test for our reporting units was not considered necessary.

2014 and 2013 Goodwill Impairment Testing

We performed our annual impairment analysis in the fourth quarter of 2014 and 2013 and determined that the carrying amount of goodwill for our CdTe components, crystalline silicon components, and systems reporting units to be recoverable because the results of the impairment tests indicated that the fair values of the reporting units significantly exceeded their carrying values. The underlying assumptions used in the first step of our 2014 and 2013 impairment tests considered our market capitalization as of October 1, 2014 and 2013, respectively, as well as the solar industry and market conditions when determining the fair value of our reporting units.

Intangible Assets

Intangible assets primarily include those assets acquired as part of our GE and TetraSun acquisitions described in Note 5 “Business Acquisitions” and our internally-generated intangible assets, which represent patents on technologies related to our products and production processes. We record an asset for patents, after the patent has been issued, based on the legal, filing, and other costs incurred to secure them. We amortize intangible assets on a straight-line basis over their estimated useful lives once the intangible assets meet the criteria to be amortized. During 2015, $73.7 million of IPR&D from the GE acquisition was reclassified to developed technology and began amortizing over its useful life of 10 years, and $39.1 million of IPR&D from the TetraSun acquisition was also reclassified to developed technology and began amortizing over its useful life of 12 years.

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The following table summarizes our intangible assets at December 31, 2015 and 2014 (in thousands):

	December 31, 2015		
	Gross Amount	Accumulated Amortization	Net Amount
Patents	$6,070	$ (1,824)	$4,246
Developed technology	114,565	(8,809)	105,756
Total	$120,635	$ (10,633)	$110,002

	December 31, 2014		
	Gross Amount	Accumulated Amortization	Net Amount
Patents	$5,347	$ (1,208)	$4,139
Developed technology	2,757	(460)	2,297
In-process research and development	112,800	—	112,800
Total	$120,904	$ (1,668)	$119,236

Amortization expense for our intangible assets was $9.2 million, $1.2 million, and $0.9 million for the years ended December 31, 2015, 2014, and 2013, respectively.

Estimated future amortization expense for our intangible assets was as follows at December 31, 2015 (in thousands):

	Amortization Expense
2016	$11,787
2017	11,403
2018	11,161
2019	11,161
2020	11,161
Thereafter	53,329
Total amortization expense	$110,002

7. Cash, Cash Equivalents, and Marketable Securities

Cash, cash equivalents, and marketable securities consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Cash and cash equivalents:		
Cash	$1,126,496	$1,480,452
Cash equivalents:		
Money market funds	330	1,602
Total cash and cash equivalents	1,126,826	1,482,054
Marketable securities:		
Foreign debt	663,454	462,731
Time deposits	40,000	40,000
U.S. debt	—	2,800
U.S. government obligations	—	3,501
Total marketable securities	703,454	509,032
Total cash, cash equivalents, and marketable securities	$1,830,280	$1,991,086

We classify our marketable securities as available-for-sale. Accordingly, we record them at fair value and account for the net unrealized gains and losses as part of “Accumulated other comprehensive income” until realized. We record

realized gains and losses on the sale or maturity of our marketable securities in “Other expense, net” computed using the specific identification method.

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During the years ended December 31, 2015, 2014, and 2013, we realized gains on the sale or maturity of our marketable securities of less than $0.1 million, $0.2 million, and less than $0.1 million, respectively. See Note 11 “Fair Value Measurements” to our consolidated financial statements for information about the fair value of our marketable securities.

As of December 31, 2015 and 2014, we identified two investments totaling $31.5 million and $41.1 million, respectively, that had been in a loss position for a period of time greater than 12 months with unrealized losses of less than $0.1 million. The unrealized losses were primarily due to increases in interest rates relative to rates at the time of purchase. Based on the underlying credit quality of the investments, we do not intend to sell these securities prior to the recovery of our cost basis. Therefore, we did not consider these securities to be other-than-temporarily impaired. All of our available-for-sale marketable securities are subject to a periodic impairment review. We did not identify any of our marketable securities as other-than-temporarily impaired as of December 31, 2015 and 2014.

The following tables summarize the unrealized gains and losses related to our available-for-sale marketable securities, by major security type, as of December 31, 2015 and 2014 (in thousands):

	As of December 31, 2015			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign debt	$665,900	$9	$2,455	$663,454
Time deposits	40,000	—	—	40,000
Total	$705,900	$9	$2,455	$703,454

	As of December 31, 2014			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign debt	$463,466	$18	$753	$462,731
Time deposits	40,000	—	—	40,000
U.S. debt	2,800	—	—	2,800
U.S. government obligations	3,500	1	—	3,501
Total	$509,766	$19	$753	$509,032

The contractual maturities of our marketable securities as of December 31, 2015 and 2014 were as follows (in thousands):

	As of December 31, 2015			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
One year or less	$290,377	$9	$406	$289,980
One year to two years	228,492	—	1,183	227,309
Two years to three years	187,031	—	866	186,165
Total	$705,900	$9	$2,455	$703,454

	As of December 31, 2014			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
One year or less	$329,974	$14	$174	$329,814
One year to two years	125,892	5	380	125,517
Two years to three years	53,900	—	199	53,701

Total	$509,766	$19	$753	$509,032

The net unrealized losses of $2.4 million and $0.7 million as of December 31, 2015 and 2014, respectively, on our marketable securities were primarily the result of increases in interest rates relative to rates at the time of purchase. Our investment policy requires marketable securities to be highly rated and limits the security types, issuer concentration, and duration to maturity of our marketable securities portfolio.

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The following tables show gross unrealized losses and estimated fair values for those marketable securities that were in an unrealized loss position as of December 31, 2015 and 2014, aggregated by major security type and the length of time the marketable securities have been in a continuous loss position (in thousands):

	As of December 31, 2015					
	In Loss Position for Less Than 12 Months		In Loss Position for 12 Months or Greater		Total	
Security Type	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Foreign debt	$629,033	$2,386	$31,491	$69	$660,524	$2,455
Total	$629,033	$2,386	$31,491	$69	$660,524	$2,455

	As of December 31, 2014					
	In Loss Position for Less Than 12 Months		In Loss Position for 12 Months or Greater		Total	
Security Type	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Foreign debt	$391,840	$740	$41,060	$13	$432,900	$753
Total	$391,840	$740	$41,060	$13	$432,900	$753

8. Restricted Cash and Investments

Restricted cash and investments consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Restricted cash	$7,764	$49,818
Restricted investments	326,114	357,235
Total restricted cash and investments (1)	$333,878	$407,053

(1) There was an additional $72.5 million and $74.7 million of restricted cash included within prepaid expenses and other current assets at December 31, 2015 and 2014, respectively.

At December 31, 2015 and 2014, our restricted cash consisted of deposits held by various banks to secure certain of our letters of credit and deposits designated for the construction of systems projects and payment of amounts related to project construction credit facilities. Restricted cash for our letters of credit is classified as current or noncurrent based on the maturity date of the corresponding letter of credit. See Note 16 “Commitments and Contingencies” to our consolidated financial statements for further discussion relating to letters of credit. Restricted cash for project construction and financing is classified as current or noncurrent based on the projected use of the restricted funds.

At December 31, 2015 and 2014, our restricted investments consisted of long-term marketable securities that were held in custodial accounts to fund the estimated future costs of collecting and recycling modules covered under our solar module collection and recycling program. We classify our restricted investments as available-for-sale. Accordingly, we record them at fair value and account for the net unrealized gains and losses as a part of “Accumulated other comprehensive income” until realized. We record realized gains and losses on the sale or maturity of our restricted investments in “Other expense, net” computed using the specific identification method. Restricted investments are classified as noncurrent as the underlying accrued solar module collection and recycling liability is also noncurrent in nature.

As necessary, we fund any incremental amounts for our estimated collection and recycling obligations within 90 days of the end of each year. We determine the funding requirement, if any, based on estimated costs of collecting and

recycling covered modules, estimated rates of return on our restricted investments, and an estimated solar module life of 25 years less amounts already funded in prior years. To ensure that these funds will be available in the future regardless of any potential adverse changes in our financial condition (even in the case of our own insolvency), we have established a trust under which estimated funds are put into custodial accounts with an established and reputable bank, for which First Solar, Inc. ("FSI"), First Solar Malaysia Sdn. Bhd. ("FS Malaysia"), and First Solar Manufacturing GmbH are grantors. Only the trustee can distribute funds from the custodial accounts, and these funds cannot be accessed for any purpose other than to cover qualified costs of module collection and recycling, either by us or a third party performing the required collection and recycling services. Investments in these custodial accounts must meet certain investment quality criteria comparable to highly rated government or agency bonds. We closely monitor our

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exposure to European markets and maintain holdings primarily consisting of German and French sovereign debt securities that are not currently at risk of default. As of December 31, 2015, we do not expect to fund any incremental amounts during the first quarter of 2016 for our module collection and recycling program.

The following tables summarize the unrealized gains and losses related to our restricted investments, by major security type, as of December 31, 2015 and 2014 (in thousands):

	As of December 31, 2015			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign government obligations	$177,507	$75,670	$—	$253,177
U.S. government obligations	61,228	11,709	—	72,937
Total	$238,735	$87,379	$—	$326,114

	As of December 31, 2014			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign government obligations	$189,455	$93,280	$—	$282,735
U.S. government obligations	58,510	15,990	—	74,500
Total	$247,965	$109,270	$—	$357,235

As of December 31, 2015, the contractual maturities of these restricted investments were between 12 years and 21 years. As of December 31, 2014, the contractual maturities of these restricted investments were between 13 years and 22 years.

9. Consolidated Balance Sheet Details

Accounts receivable trade, net

Accounts receivable trade, net consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Accounts receivable trade, gross	$500,631	$142,542
Allowance for doubtful accounts	(2)	(7,108)
Accounts receivable trade, net	$500,629	$135,434

At December 31, 2015 and 2014, $21.5 million and $21.4 million, respectively, of our accounts receivable trade, net were secured by letters of credit, bank guarantees, or other forms of financial security issued by creditworthy financial institutions.

Accounts receivable, unbilled and retainage

Accounts receivable, unbilled and retainage consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Accounts receivable, unbilled	$40,205	$41,868
Retainage	18,966	35,103
Accounts receivable, unbilled and retainage	$59,171	$76,971

The current portion of retainage is included within accounts receivable, unbilled and retainage. Retainage refers to the portion of the contract price earned by us for work performed, but held for payment by our customer as a form of

security until we reach certain construction milestones. Retainage included within accounts receivable, unbilled and retainage is expected to be billed and collected within the next 12 months.

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Inventories

Inventories consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Raw materials	$159,078	$157,468
Work in process	19,736	20,829
Finished goods	309,369	442,408
Inventories	$488,183	$620,705
Inventories – current	$380,424	$505,088
Inventories – noncurrent	$107,759	$115,617

Balance of systems parts

Balance of systems parts were $136.9 million and $125.1 million as of December 31, 2015 and 2014, respectively, and represented mounting, electrical, and other construction parts purchased for PV solar power systems to be constructed or currently under construction, which we held title to and were not yet installed in a system. Such construction parts included items such as posts, tilt brackets, tables, harnesses, combiner boxes, inverters, cables, tracker equipment, and other parts we may purchase or assemble for the systems we construct. We carry these parts at the lower of cost or net realizable value, with such value being based primarily on recoverability through installation in a solar power system or recoverability through a sales agreement. Balance of systems parts do not include any solar modules that we manufacture.

Prepaid expenses and other current assets

Prepaid expenses and other current assets consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Prepaid expenses	$74,990	$42,193
Derivative instruments	2,691	9,791
Restricted cash	72,526	74,695
Other current assets	98,770	75,472
Prepaid expenses and other current assets	$248,977	$202,151

Property, plant and equipment, net

Property, plant and equipment, net consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Land	$12,063	$12,378
Buildings and improvements (1)	410,898	397,087
Machinery and equipment (1)	1,824,717	1,649,363
Office equipment and furniture	144,773	134,268
Leasehold improvements	50,546	50,096
Construction in progress	37,734	154,497
Stored assets (2)	138,954	155,389
Property, plant and equipment, gross	2,619,685	2,553,078
Less: accumulated depreciation	(1,335,549)	(1,133,090)
Property, plant and equipment, net	$1,284,136	$1,419,988

(1) In 2015, we reclassified $15.2 million and $2.5 million from “Assets held for sale” to “Building and improvements” and “Machinery and equipment,” respectively, as these assets no longer met the criteria to be classified as held for

sale.

(2) Consists of machinery and equipment (“stored assets”) that were originally purchased for installation in our previously planned manufacturing capacity expansions. We intend to install and place the stored assets into service when such assets are required or beneficial to our existing installed manufacturing capacity or when market demand supports additional

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or market-specific manufacturing capacity. During the year ended December 31, 2015, we transferred $16.4 million of stored assets to our manufacturing facility in Perrysburg, Ohio for use in the production of solar modules. As the remaining stored assets are neither in the condition nor location to produce modules as intended, we will not begin depreciation until such assets are placed into service. The stored assets are evaluated for impairment under a held and used impairment model whenever events or changes in business circumstances arise, including consideration of technological obsolescence, that may indicate that the carrying amount of our long-lived assets may not be recoverable. We ceased the capitalization of interest on our stored assets once they were physically received from the related machinery and equipment vendors.

Depreciation of property, plant and equipment was $245.7 million, $245.0 million, and $237.9 million for the years ended December 31, 2015, 2014, and 2013, respectively.

PV solar power systems, net

PV solar power systems, net consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
PV solar power systems, gross	$97,991	$47,727
Accumulated depreciation	(4,250)	(1,334)
PV solar power systems, net	$93,741	$46,393

During 2015, we placed $52.2 million of projects into service, net of investment tax credits, including our 30 MW AC Barilla Solar project in Pecos County, Texas and various other projects in India and Australia. Depreciation of PV solar power systems was $2.9 million, $1.4 million, and zero for the years ended December 31, 2015, 2014, and 2013, respectively.

Capitalized interest

The cost of constructing facilities, equipment, and project assets includes interest costs incurred during the assets' construction period. The components of interest expense and capitalized interest were as follows during the years ended December 31, 2015, 2014, and 2013 (in thousands):

	2015	2014	2013
Interest cost incurred	$(19,367)	$(10,828)	$(11,703)
Interest cost capitalized – property, plant and equipment	1,335	2,324	2,608
Interest cost capitalized – project assets	11,057	6,522	7,211
Interest expense, net	$(6,975)	$(1,982)	$(1,884)

Project assets and deferred project costs

Project assets and deferred project costs consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Project assets – development costs, including project acquisition and land costs	436,375	379,373
Project assets – construction costs	674,762	408,402
Project assets	1,111,137	787,775
Deferred project costs – current	187,940	29,354
Deferred project costs – noncurrent	—	22,573
Deferred project costs	187,940	51,927
Total project assets and deferred project costs	$1,299,077	$839,702

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Other assets

Other assets consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Notes receivable (1)	$12,648	$12,096
Income taxes receivable	4,071	4,850
Deferred rent	23,317	23,823
Other	29,686	20,901
Other assets	$69,722	$61,670

(1) On April 8, 2009, we entered into a credit facility agreement with a solar power project entity of one of our customers for an available amount of €17.5 million to provide financing for a PV solar power system. The credit facility replaced a bridge loan that we had made to this entity. The credit facility bears interest at 8.0% per annum payable quarterly with the full amount due on December 31, 2026. As of December 31, 2015 and 2014, the balance on the credit facility was €7.0 million ($7.6 million and $8.5 million, respectively, at the balance sheet dates). On February 7, 2014, we entered into a convertible loan agreement with a strategic entity for an available amount of up to $5.0 million. The loan bears interest at 8.0% per annum. As of December 31, 2015 and 2014, the balance outstanding on the convertible loan was $5.0 million and $3.5 million respectively.

Accrued expenses

Accrued expenses consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Accrued compensation and benefits	$63,699	$43,072
Accrued property, plant and equipment	7,808	30,723
Accrued inventory and balance of systems parts	53,542	36,233
Accrued project assets and deferred project costs	145,695	113,012
Product warranty liability (1)	38,468	69,656
Accrued expenses in excess of normal product warranty liability and related expenses (1)	5,040	7,800
Other	95,200	87,660
Accrued expenses	$409,452	$388,156

(1) See Note 16 “Commitments and Contingencies” to our consolidated financial statements for further discussion of “Product warranty liability” and “Accrued expenses in excess of normal product warranty liability and related expenses.”

Billings in excess of costs and estimated earnings

Billings in excess of costs and estimated earnings was $87.9 million and $195.3 million at December 31, 2015 and 2014, respectively, and represented billings made or payments received in excess of revenue recognized on contracts accounted for under the percentage-of-completion method. Typically, billings are made based on the completion of certain construction milestones as provided for in the sales arrangement, and the timing of revenue recognition may be different from when we can bill or collect from a customer.

Payments and billings for deferred project costs

Payments and billings for deferred project costs was $28.6 million and $60.6 million at December 31, 2015 and 2014, respectively, customer payments received or customer billings made under the terms of solar power project related sales contracts for which all revenue recognition criteria for real estate transactions have not yet been met. The

associated solar power project costs are included within deferred project costs. We classify such amounts as current or noncurrent depending on when all revenue recognition criteria are expected to be met, consistent with the classification of the associated deferred project costs.

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Other current liabilities

Other current liabilities consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Deferred revenue	$17,957	$21,879
Derivative instruments	16,450	7,657
Contingent consideration (1)	9,233	36,817
Financing liability (2)	5,277	—
Other	8,821	22,311
Other current liabilities	$57,738	$88,664

(1) See Note 16 “Commitments and Contingencies” to our consolidated financial statements for further discussion.

(2) See Note 12 “Investments in Unconsolidated Affiliates and Joint Ventures” to our consolidated financial statements for further discussion of the financing liabilities associated with our leaseback of the Maryland Solar project.

Other liabilities

Other liabilities consisted of the following at December 31, 2015 and 2014 (in thousands):

	2015	2014
Product warranty liability (1)	$193,283	$153,401
Other taxes payable	66,549	82,555
Contingent consideration (1)	8,756	17,077
Liability in excess of normal product warranty liability and related expenses (1)	19,565	23,139
Financing liability (2)	36,706	—
Other	67,453	44,412
Other liabilities	$392,312	$320,584

(1) See Note 16 “Commitments and Contingencies” to our consolidated financial statements for further discussion on “Product warranty liability,” “Contingent consideration,” and “Liability in excess of normal product warranty liability and related expenses.”

(2) See Note 12 “Investments in Unconsolidated Affiliates and Joint Ventures” to our consolidated financial statements for further discussion of the financing liabilities associated with our leaseback of the Maryland Solar project.

10. Derivative Financial Instruments

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

Depending on the terms of the specific derivative instruments and market conditions, some of our derivative instruments may be assets and others liabilities at any particular balance sheet date. We report all of our derivative instruments at fair value and account for changes in the fair value of derivative instruments within “Accumulated other comprehensive income” if the derivative instruments qualify for hedge accounting. For those derivative instruments that do not qualify for hedge accounting (“economic hedges”), we record the changes in fair value directly to earnings. See Note 11 “Fair Value Measurements” to our consolidated financial statements for information about the techniques we use to measure the fair value of our derivative instruments.

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The following tables present the fair values of derivative instruments included in our consolidated balance sheets as of December 31, 2015 and 2014 (in thousands):

	December 31, 2015		
	Prepaid Expenses and Other Current Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments:			
Foreign exchange forward contracts	$—	$132	$285
Cross-currency swap contract	—	6,909	13,835
Interest rate swap contract	—	16	—
Total derivatives designated as hedging instruments	$—	$7,057	$14,120
Derivatives not designated as hedging instruments:			
Foreign exchange forward contracts	$2,691	$9,393	$—
Total derivatives not designated as hedging instruments	$2,691	$9,393	$—
Total derivative instruments	$2,691	$16,450	$14,120

	December 31, 2014		
	Prepaid Expenses and Other Current Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments:			
Foreign exchange forward contracts	$1,213	$—	$—
Cross-currency swap contract	—	2,996	8,995
Interest rate swap contract	—	164	46
Total derivatives designated as hedging instruments	$1,213	$3,160	$9,041
Derivatives not designated as hedging instruments:			
Foreign exchange forward contracts	$8,578	$4,497	$—
Total derivatives not designated as hedging instruments	$8,578	$4,497	$—
Total derivative instruments	$9,791	$7,657	$9,041

The impact of offsetting balances associated with derivative instruments designated as hedging instruments is shown below (in thousands):

	December 31, 2015					
				Gross Amounts Not Offset in Consolidated Balance Sheet		
	Gross Asset (Liability)	Gross Offset in Consolidated Balance Sheet	Net Amount Recognized in Financial Statements	Financial Instruments	Cash Collateral Pledged	Net Amount
Foreign exchange forward contracts	$(417)	—	(417)	—	—	$(417)
Cross-currency swap contract	$(20,744)	—	(20,744)	—	—	$(20,744)

Interest rate swap contract	$(16)	—	(16)	—	—	$(16)

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	December 31, 2014					
				Gross Amounts Not Offset in Consolidated Balance Sheet		
	Gross Asset (Liability)	Gross Offset in Consolidated Balance Sheet	Net Amount Recognized in Financial Statements	Financial Instruments	Cash Collateral Pledged	Net Amount
Foreign exchange forward contracts	$1,213	—	1,213	—	—	$1,213
Cross-currency swap contract	$(11,991)	—	(11,991)	—	—	$(11,991)
Interest rate swap contract	$(210)	—	(210)	—	—	$(210)

The following table presents the effective amounts related to derivative instruments designated as cash flow hedges affecting accumulated other comprehensive income (loss) and our consolidated statements of operations for the years ended December 31, 2015, 2014, and 2013 (in thousands):

	Foreign Exchange Forward Contracts	Interest Rate Swap Contract	Cross Currency Swap Contract	Total
Balance in accumulated other comprehensive income (loss) at December 31, 2012	$8,980	$(1,467)	$(8,031)	$(518)
Amounts recognized in other comprehensive income (loss)	8,486	(30)	(6,666)	1,790
Amounts reclassified to net sales as a result of forecasted transactions being probable of not occurring	(13,115)	—	—	(13,115)
Amounts reclassified to earnings impacting:				
Foreign currency (loss) gain, net	—	—	8,426	8,426
Interest expense, net	—	794	451	1,245
Balance in accumulated other comprehensive income (loss) at December 31, 2013	4,351	(703)	(5,820)	(2,172)
Amounts recognized in other comprehensive income (loss)	1,769	12	(2,846)	(1,065)
Amounts reclassified to earnings impacting:				
Cost of sales	501	—	—	501
Foreign currency (loss) gain, net	—	—	5,050	5,050
Interest expense, net	—	481	217	698
Balance in accumulated other comprehensive income (loss) at December 31, 2014	6,621	(210)	(3,399)	3,012
Amounts reclassified to net sales as a result of forecasted transactions being probable of not occurring	(1,295)	—	—	(1,295)
Amounts recognized in other comprehensive income (loss)	832	23	(9,219)	(8,364)
Amounts reclassified to earnings impacting:				
Net sales	(487)	—	—	(487)
Cost of sales	(5,509)	—	—	(5,509)
Foreign currency (loss) gain, net	—	—	10,135	10,135
Interest expense, net	—	171	466	637
Balance in accumulated other comprehensive income (loss) at December 31, 2015	$162	$(16)	$(2,017)	$(1,871)

We recorded no amounts related to ineffective portions of our derivative instruments designated as cash flow hedges during the years ended December 31, 2015, 2014, and 2013. We recognized unrealized losses of $0.1 million, unrealized gains of $1.8 million, and unrealized losses of $2.1 million related to amounts excluded from effectiveness testing for our foreign exchange forward contracts designated as cash flow hedges within “Other expense, net” during the years ended December 31, 2015, 2014, and 2013, respectively.

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The following table presents amounts related to derivative instruments not designated as hedges affecting our consolidated statements of operations for the years ended December 31, 2015, 2014, and 2013 (in thousands):

		Amount of Gain (Loss) Recognized in Income		
Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income	2015	2014	2013
Foreign exchange forward contracts	Foreign currency (loss) gain, net	$(3,425)	$(8,066)	$6,063
Foreign exchange forward contracts	Cost of sales	12,422	13,240	(3,760)
Foreign exchange forward contracts	Net sales	—	—	5,324

Interest Rate Risk

We use cross-currency swap and interest rate swap contracts to mitigate our exposure to interest rate fluctuations associated with certain of our debt instruments. We do not use such swap contracts for speculative or trading purposes.

On September 30, 2011, we entered into a cross-currency swap contract to hedge the floating rate foreign currency denominated loan under our Malaysian Ringgit Facility Agreement. This swap had an initial notional value of Malaysian Ringgit ("MYR") MYR 465.0 million and entitled us to receive a three-month floating Kuala Lumpur Interbank Offered Rate ("KLIBOR") interest rate while requiring us to pay a U.S. dollar fixed rate of 3.495%. Additionally, this swap hedges the foreign currency risk of the Malaysian Ringgit denominated principal and interest payments as we make swap payments in U.S. dollars and receive swap payments in Malaysian Ringgits at a fixed exchange rate of 3.19 MYR to USD. The notional amount of the swap is scheduled to decline in line with our scheduled principal payments on the underlying hedged debt. As of December 31, 2015 and 2014, the notional value of this cross-currency swap contract was MYR 232.6 million ($54.2 million) and MYR 310.1 million ($88.6 million), respectively. This swap is a derivative instrument that qualifies for accounting as a cash flow hedge in accordance with ASC 815, and we designated it as such. We determined that this swap was highly effective as a cash flow hedge at December 31, 2015 and 2014. For the years ended December 31, 2015 and 2014, there were no amounts of ineffectiveness from this cash flow hedge.

On May 29, 2009, we entered into an interest rate swap contract to hedge a portion of the floating rate loans under our Malaysian Credit Facility, which became effective on September 30, 2009 with an initial notional value of €57.3 million and pursuant to which we are entitled to receive a six-month floating Euro Interbank Offered Rate ("EURIBOR") interest rate while being required to pay a fixed rate of 2.80%. The notional amount of the interest rate swap contract is scheduled to decline in line with our scheduled principal payments on the underlying hedged debt. As of December 31, 2015 and 2014, the notional value of this interest rate swap contract was €2.2 million ($2.4 million) and €10.3 million ($12.5 million), respectively. This derivative instrument qualifies for accounting as a cash flow hedge in accordance with ASC 815, and we designated it as such. We determined that our interest rate swap contract was highly effective as a cash flow hedge at December 31, 2015 and 2014. For the years ended December 31, 2015, 2014, and 2013, there were no amounts of ineffectiveness from this cash flow hedge.

In the following 12 months, we expect to reclassify to earnings $0.7 million of net unrealized losses related to swap contracts that are included in "Accumulated other comprehensive income" at December 31, 2015 as we realize the earnings effect of the underlying loans. The amount we ultimately record to earnings will depend on the actual interest rates and foreign exchange rates when we realize the earnings effect of the underlying loans.

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Foreign Currency Exchange Risk

Cash Flow Exposure

We expect of our subsidiaries to have material future cash flows that will be denominated in currencies other than the subsidiaries' functional currencies. Changes in the exchange rates between the functional currencies of our subsidiaries and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge a portion of these forecasted cash flows. As of December 31, 2015 and 2014, these foreign exchange forward contracts hedged our forecasted cash flows for 33 months and 6 months, respectively. These foreign exchange forward contracts qualify for accounting as cash flow hedges in accordance with ASC 815, and we designated them as such. We initially report the effective portion of a derivative's unrealized gain or loss in "Accumulated other comprehensive income" and subsequently reclassify amounts into earnings when the hedged transaction occurs and impacts earnings. We determined that these derivative financial instruments were highly effective as cash flow hedges at December 31, 2015 and 2014. During the years ended December 31, 2015, 2014, and 2013, we did not discontinue any cash flow hedges because a hedging relationship was no longer highly effective. As of December 31, 2015 and 2014, the notional values associated with our foreign exchange forward contracts qualifying as cash flow hedges were as follows (notional amounts and U.S. dollar equivalents in millions):

	December 31, 2015	
Currency	Notional Amount	USD Equivalent
Indian rupee	INR1,290.0	$19.4
	December 31, 2014	
Currency	Notional Amount	USD Equivalent
Australian dollar	AUD 38.4	$31.5
Japanese yen	JPY1,223.2	$10.3

As of December 31, 2015 and 2014, the unrealized gains on these contracts were $0.2 million and $6.6 million, respectively.

In the following 12 months, we expect to reclassify to earnings $0.1 million of net unrealized gains related to these forward contracts that are included in "Accumulated other comprehensive income" at December 31, 2015 as we realize the earnings effect of the related forecasted transactions. The amount we ultimately record to earnings will depend on the actual exchange rates when we realize the related forecasted transactions.

Transaction Exposure and Economic Hedging

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

We purchase foreign exchange forward contracts to economically hedge balance sheet and other exposures related to transactions between certain of our subsidiaries and transactions with third parties. Such contracts are considered

economic hedges and do not qualify for hedge accounting. We recognize gains or losses from the fluctuation in foreign exchange rates and the fair value of these derivative contracts in “Net sales,” “Cost of sales,” and “Foreign currency (loss) gain, net” on our consolidated statements of operations, depending on where the gain or loss from the economically hedged item is classified. As of December 31, 2015, the total net unrealized loss on our economic hedge foreign exchange forward contracts was $6.7 million. As of December 31, 2014, the total net unrealized gain on our economic hedge foreign exchange forward contracts was $4.1 million. As these amounts do not qualify for hedge accounting, changes in the fair value of such derivative instruments are recorded directly to earnings. These contracts mature at dates within the next two years.

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As of December 31, 2015 and 2014, the notional values of our foreign exchange forward contracts that do not qualify for hedge accounting were as follows (notional amounts and U.S. dollar equivalents in millions):

	December 31, 2015		
Transaction	Currency	Notional Amount	USD Equivalent
Purchase	Euro	€42.0	$45.9
Sell	Euro	€150.1	$164.0
Purchase	Australian dollar	AUD 41.1	$29.9
Sell	Australian dollar	AUD 89.0	$64.8
Purchase	Malaysian ringgit	MYR 61.4	$14.3
Sell	Malaysian ringgit	MYR 80.7	$18.8
Sell	Canadian dollar	CAD 4.5	$3.2
Sell	Japanese yen	JPY 8,448.7	$70.1
Purchase	British pound	GBP 11.1	$16.5
Sell	British pound	GBP 16.0	$23.7
Sell	Indian rupee	INR 8,939.0	$134.6
Purchase	South African rand	ZAR 41.1	$2.7
Sell	South African rand	ZAR 81.5	$5.3

	December 31, 2014		
Transaction	Currency	Notional Amount	USD Equivalent
Purchase	Euro	€91.1	$110.9
Sell	Euro	€92.4	$112.5
Purchase	Australian dollar	AUD 26.0	$21.3
Sell	Australian dollar	AUD 118.0	$96.7
Purchase	Malaysian ringgit	MYR 146.0	$41.7
Sell	Malaysian ringgit	MYR 93.6	$26.7
Purchase	Canadian dollar	CAD 0.7	$0.6
Sell	Canadian dollar	CAD 8.3	$7.1
Purchase	Japanese yen	JPY 244.6	$2.1
Sell	Japanese yen	JPY 2,322.1	$19.5
Purchase	British pound	GBP 1.4	$2.2
Sell	British pound	GBP 37.7	$58.6

11. Fair Value Measurements

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

- Cash equivalents. At December 31, 2015 and 2014, our cash equivalents consisted of money market funds. We value our money market cash equivalents using observable inputs that reflect quoted prices for securities with identical characteristics, and accordingly, we classify the valuation techniques that use these inputs as Level 1.

- Marketable securities and restricted investments. At December 31, 2015, our marketable securities consisted of foreign debt and time deposits, and our restricted investments consisted of foreign and U.S. government obligations. At December 31, 2014, our marketable securities consisted of foreign debt, time deposits, U.S. debt, and U.S. government obligations, and our restricted investments consisted of foreign and U.S. government obligations. We value our marketable securities and restricted investments using observable inputs that reflect quoted prices for securities with identical characteristics or quoted prices for securities with similar characteristics and other observable inputs (such as interest rates that are observable at commonly quoted intervals). Accordingly, we classify the valuation techniques that use these inputs as either Level 1 or Level 2 depending on the inputs used. We also consider

the effect of our counterparties' credit standings in these fair value measurements.

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- Derivative assets and liabilities. At December 31, 2015 and 2014, our derivative assets and liabilities consisted of foreign exchange forward contracts involving major currencies, an interest rate swap contract involving a benchmark of interest rates, and a cross-currency swap contract including both. Since our derivative assets and liabilities are not traded on an exchange, we value them using standard industry valuation models. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, credit risk, foreign exchange rates, and forward and spot prices for currencies. These inputs are observable in active markets over the contract term of the derivative instruments we hold, and accordingly, we classify these valuation techniques as Level 2. We consider the effect of our counterparties' and our own credit standing in the fair value measurements of our derivative assets and liabilities, respectively.

At December 31, 2015 and 2014, the fair value measurements of our assets and liabilities that we measure on a recurring basis were as follows (in thousands):

	December 31, 2015			
		Fair Value Measurements at Reporting Date Using		
	Total Fair Value and Carrying Value on Our Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Money market funds	$330	$330	$—	$—
Marketable securities:				
Foreign debt	663,454	—	663,454	—
Time deposits	40,000	40,000	—	—
Restricted investments	326,114	—	326,114	—
Derivative assets	2,691	—	2,691	—
Total assets	$1,032,589	$40,330	$992,259	$—
Liabilities:				
Derivative liabilities	$30,570	$—	$30,570	$—

	December 31, 2014			
		Fair Value Measurements at Reporting Date Using		
	Total Fair Value and Carrying Value on Our Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Money market funds	$1,602	$1,602	$—	$—
Marketable securities:				
Foreign debt	462,731	—	462,731	—
Time deposits	40,000	40,000	—	—

U.S debt	2,800	—	2,800	—
U.S. government obligations	3,501	—	3,501	—
Restricted investments	357,235	—	357,235	—
Derivative assets	9,791	—	9,791	—
Total assets	$877,660	$41,602	$836,058	$—
Liabilities:				
Derivative liabilities	$16,698	$—	$16,698	$—

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Fair Value of Financial Instruments

The carrying values and fair values of our financial and derivative instruments at December 31, 2015 and 2014 were as follows (in thousands):

	December 31, 2015		December 31, 2014	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets:				
Marketable securities	$703,454	$703,454	$509,032	$509,032
Foreign exchange forward contract assets	2,691	2,691	9,791	9,791
Restricted investments	326,114	326,114	357,235	357,235
Notes receivable – noncurrent	12,648	18,382	12,096	12,189
Notes receivable, affiliates – noncurrent	17,887	19,932	9,127	9,812
Liabilities:				
Long-term debt, including current maturities	$288,350	$294,449	$211,915	$224,489
Interest rate swap contract liabilities	16	16	210	210
Cross-currency swap contract liabilities	20,744	20,744	11,991	11,991
Foreign exchange forward contract liabilities	9,810	9,810	4,497	4,497

The carrying values on our consolidated balance sheets of our cash and cash equivalents, trade accounts receivable, unbilled accounts receivable and retainage, current affiliate notes receivable, other assets, restricted cash, accounts payable, income taxes payable, and accrued expenses approximated their fair values due to their nature and relatively short maturities; therefore, we excluded them from the foregoing table.

We estimated the fair value of our long-term debt and notes receivable using a discounted cash flow approach (an income approach) or a market approach based on observable market inputs. We incorporated the credit risk of our counterparty for all asset fair value measurements and our own credit risk for all liability fair value measurements. Such fair value measurements are considered Level 2 under the fair value hierarchy.

Credit Risk

We have certain financial and derivative instruments that subject us to credit risk. These consist primarily of cash, cash equivalents, marketable securities, restricted cash and investments, trade accounts receivable, notes receivable, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash equivalents, marketable securities, restricted cash and investments, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts with various high-quality financial institutions and limit the amount of credit risk from any one counterparty. We continuously evaluate the credit standing of our counterparty financial institutions. Our net sales are primarily concentrated among a limited number of customers. We monitor the financial condition of our customers and perform credit evaluations whenever considered necessary. Depending upon the sales arrangement, we may require some form of payment security from our customers, including bank guarantees or commercial letters of credit.

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12. Investments in Unconsolidated Affiliates and Joint Ventures

We have joint ventures or other strategic arrangements with partners in several markets, which are generally used to expedite our penetration of those 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. Investments in unconsolidated entities for which we have significant influence, but not control, over the entities' operating and financial activities are accounted for under the equity method of accounting. Investments in entities for which we do not have the ability to exert such significant influence are accounted for under the cost method of accounting. The following table summarizes our equity and cost method investments as of December 31, 2015 and 2014 (in thousands):

	2015	2014
Equity method investments	$375,355	$249,614
Cost method investments	24,450	5,415
Investments in unconsolidated affiliates and joint ventures	$399,805	$255,029

8point3 Energy Partners LP

In June 2015, 8point3 Energy Partners LP (the "Partnership"), a limited partnership formed by First Solar and SunPower Corporation (the "Sponsors"), completed its initial public offering (the "IPO") of 20,000,000 Class A shares representing limited partner interests in the Partnership at $21.00 per share pursuant to a Registration Statement on Form S-1, as amended. As part of the IPO, the Sponsors contributed various projects to 8point3 Operating Company, LLC ("OpCo") in exchange for voting and economic interests in the entity, and the Partnership acquired an economic interest in OpCo using proceeds from the IPO. Our contributions to OpCo included our 49% membership interests in SG2 Holdings, LLC; Lost Hills Blackwell Holdings, LLC; and NS Solar Holdings, LLC as well as our 100% membership interest in Maryland Solar LLC.

After the closing of the IPO, we owned an aggregate of 22,116,925 Class B shares representing a 31% voting interest in the Partnership, and an aggregate of 6,721,810 common units and 15,395,115 subordinated units in OpCo together representing a 31% economic and voting interest in the entity. We also received a distribution from OpCo of $283.7 million following the IPO. Future quarterly distributions from OpCo are subject to certain forbearance and subordination periods. During the forbearance period, the Sponsors have agreed to forego any distributions declared on their common and subordinated units. The forbearance period will end on or after March 1, 2016 when the board of directors of the Partnership's general partner, 8point3 General Partner, LLC ("General Partner"), with the concurrence of its conflicts committee, determines that OpCo will be able to earn and pay at least the minimum quarterly distribution on each of its outstanding common and subordinated units for such quarter and the successive quarter.

During the subordination period, holders of the subordinated units are not entitled to receive any distributions until the common units have received their minimum quarterly distribution plus any arrearages in the payment of minimum distributions from prior quarters. The subordination period will end after OpCo has earned and paid minimum quarterly distributions for three years ending on or after August 31, 2018 and there are no outstanding arrearages on common units. Notwithstanding the foregoing, the subordination period could end after OpCo has earned and paid 150% of minimum quarterly distributions, plus the related distribution on the incentive distribution rights, for one year ending on or after August 31, 2016 and there are no outstanding arrearages on common units. At the end of the subordination period, all subordinated units will convert to common units on a one-for-one basis. We also hold certain incentive distribution rights in OpCo, which represent a right to incremental distributions after certain distribution thresholds are met.

The Partnership is managed and controlled by its General Partner, and we account for our interest in OpCo, a subsidiary of the Partnership, under the equity method of accounting as we are able to exercise significant influence over the Partnership due to our representation on the board of directors of its General Partner. The Partnership owns, operates, and is expected to acquire additional solar energy generation projects from the Sponsors. The Partnership's initial project portfolio includes interests in more than 0.4 GW of various solar energy generation projects, and the Partnership also has rights of first offer on interests in over 1.1 GW of additional solar energy generation projects that are currently contracted or are expected to be contracted prior to being sold by the Sponsors.

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Under the equity method of accounting, we recognize equity in earnings for our proportionate share of OpCo's net income or loss including adjustments for the amortization of a $45.5 million basis difference resulting from the cost of our investment differing from our proportionate share of OpCo's equity. We recognized equity in earnings, net of tax, from our investment in OpCo of $20.8 million for the year ended December 31, 2015. As of December 31, 2015, the carrying value of our investment in OpCo was $152.5 million.

In connection with the IPO, we entered into an agreement with a subsidiary of the Partnership to lease back the Maryland Solar project until December 31, 2019. Under the terms of the agreement, we will make fixed rent payments to the Partnership's subsidiary and be entitled to all the energy generated by the project. Due to our continuing involvement with the project, we account for the leaseback agreement as a financing transaction. As of December 31, 2015, our financing obligation associated with the leaseback was $42.0 million, of which $5.3 million and $36.7 million was classified as "Other current liabilities" and "Other liabilities," respectively, in the accompanying consolidated balance sheets.

We have also entered into a Management Services Agreement with the Partnership whereby we will provide certain corporate support services for an annual management fee of $0.6 million, which is consistent with the prevailing market rates for such services. These services include functions such as general oversight and supervision of the preparation and filing of income taxes, information technology, internal audit and compliance services, and other management functions. Between December 1, 2015 and November 30, 2016, we have the one-time right to increase the management fee by an amount not to exceed 15% in the event that our costs exceed the amount of the management fee.

Additionally, we entered into various Asset Management Agreements with project entities of the Partnership. Under each agreement, we will provide administrative services to the project entities for an annual fee of $0.3 million, which increases by 2% per year thereafter. These asset management fees are also consistent with the prevailing market rates for such services.

We also provide O&M services to certain of the Partnership's partially owned project entities, including SG2 Holdings, LLC; Lost Hills Blackwell Holdings, LLC; and NS Solar Holdings, LLC. During the year ended December 31, 2015, we recognized revenue of $2.6 million for such O&M services.

In June 2015, OpCo entered into a $525.0 million senior secured credit facility, consisting of a $300.0 million term loan facility, a $25.0 million delayed draw term loan facility, and a $200.0 million revolving credit facility (the "OpCo Credit Facility"). Proceeds from the term loan were used to make initial distributions to the Sponsors. The OpCo Credit Facility is secured by a pledge of the Sponsors' equity interests in OpCo.

SG2 Holdings, LLC

In November 2014, we completed the sale of 51% of our 150 MW Solar Gen 2 project to a subsidiary of Southern Power Company. The Solar Gen 2 project spans three sites, each of which is an approximately 50 MW grid-connected PV solar power system, comprising a combined 1,451 acres of land in Imperial County, California. Electricity generated by the systems is contracted to serve a 25-year PPA with a local utility company. Our remaining 49% membership interest in the project holding company, SG2 Holdings, LLC, was accounted for under the equity method of accounting as we were able to exercise significant influence over the project due to our representation on its management committee. Under the terms of the project LLC agreement, each member is entitled to receive cash distributions based on their respective membership interests, and Southern Power Company is entitled to substantially all of the project's federal tax benefits. In June 2015, our 49% interest in SG2 Holdings, LLC with a carrying value of $224.5 million was contributed to OpCo. Prior to the contribution, we recognized equity in earnings, net of tax, from our investment in SG2 Holdings, LLC of $2.1 million for the six months ended June 30, 2015. As of December 31,

2014, the carrying value of our investment was $219.9 million.

Lost Hills Blackwell Holdings, LLC

In April 2015, we sold 51% of our 32 MW Lost Hills Blackwell project to a subsidiary of Southern Power Company. Electricity generated by the system is contracted to serve a short-term PPA with a local municipality and a 25-year PPA with a local utility company. Our remaining 49% membership interest in the project holding company, Lost Hills Blackwell Holdings, LLC, was accounted for under the equity method of accounting as we were able to exercise significant influence over the project due to our representation on its management committee. Under the terms of the project LLC agreement, each member is entitled to receive cash distributions based on their respective membership interests, and Southern Power Company is entitled to substantially all of the project's federal tax benefits. In June 2015, our 49% interest in Lost Hills Blackwell Holdings, LLC with a carrying value of $34.1 million was contributed to OpCo. Prior to the contribution, we recognized equity in earnings, net of tax, from our investment in Lost Hills Blackwell Holdings, LLC of $0.2 million for the six months ended June 30, 2015.

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NS Solar Holdings, LLC

In April 2015, we also sold 51% of our 60 MW North Star Solar project to a subsidiary of Southern Power Company. Electricity generated by the system is contracted to serve a 20-year PPA with a local utility company. Our remaining 49% membership interest in the project holding company, NS Solar Holdings, LLC, was accounted for under the equity method of accounting as we were able to exercise significant influence over the project due to our representation on its management committee. Under the terms of the project LLC agreement, each member is entitled to receive cash distributions based on their respective membership interests, and Southern Power Company is entitled to substantially all of the project's federal tax benefits. In June 2015, our 49% interest in NS Solar Holdings, LLC with a carrying value of $93.6 million was contributed to OpCo. Prior to the contribution, we recognized a loss, net of tax, from our investment in NS Solar Holdings, LLC of less than $0.1 million for the six months ended June 30, 2015.

Desert Stateline Holdings, LLC

In August 2015, we sold 51% of our partially constructed 300 MW Desert Stateline project to a subsidiary of Southern Power Company. Electricity generated by the system is contracted to serve a 20-year PPA with a local utility company. Our remaining 49% membership interest in the project holding company, Desert Stateline Holdings, LLC, is accounted for under the equity method of accounting as we are able to exercise significant influence over the project due to our representation on its management committee. Under the terms of the project LLC agreement, each member is entitled to receive cash distributions based on their respective membership interests, and Southern Power Company is entitled to substantially all of the project's federal tax benefits. During the year ended December 31, 2015, we recognized no equity in earnings from our investment in Desert Stateline Holdings, LLC. As of December 31, 2015, the carrying value of our investment was $196.9 million.

Clean Energy Collective, LLC

In November 2014, we entered into various agreements to purchase a minority ownership interest in Clean Energy Collective, LLC ("CEC"). This investment provided us with additional access to the distributed generation market and a partner to develop and market community solar offerings to North American residential customers and businesses directly on behalf of client utility companies. As part of the investment, we also received a warrant, valued at $1.8 million, to purchase additional ownership interests at prices at or above our initial investment price per unit.

In addition to our equity investment in CEC, we also entered into a loan agreement to provide CEC with term loan advances up to $15.0 million. All loans are due in November 2017 on the third anniversary of the initial loan agreement. Interest is payable semiannually at rates ranging from 7% to 16% depending on CEC's current capital structure. As of December 31, 2015 and 2014, the balance outstanding on the loans was $15.0 million and $9.1 million, respectively.

CEC is considered a variable interest entity, and our 27% ownership interest in and loans to the company are considered variable interests. We account for our investment in CEC under the equity method of accounting as we concluded we are not the primary beneficiary of the company given that we do not have the power to make decisions over the activities that most significantly impact the company's economic performance. Under the equity method of accounting, we recognize equity in earnings for our proportionate share of CEC's net income or loss including adjustments for the amortization of a basis difference resulting from the cost of our investment differing from our proportionate share of CEC's equity. During the years ended December 31, 2015 and 2014, we recognized losses, net of tax, of $1.9 million and $0.3 million, respectively, from our investment in CEC. As of December 31, 2015 and 2014, the carrying value of our investment was $16.1 million and $19.5 million, respectively.

Joint Venture with Customer

In September 2013, we contributed an immaterial amount for a 50% ownership interest in a newly formed joint venture, which was established to develop solar power projects in Europe, North Africa, the United States, and the Middle East. One of our customers also contributed an immaterial amount for the remaining 50% ownership interest in the joint venture. The project development and related activities of the entity are governed by a joint venture agreement. The intent of this agreement is to outline the general parameters of the arrangement with our customer, whereby we will supply solar modules for various solar power projects and our customer will develop and construct the projects. The joint venture agreement also requires each party to consent to all decisions related to the most significant activities of the entity. There are no requirements for us to make further contributions to the joint venture, and the proceeds from the sale of any future projects are to be divided equally between us and our customer after the repayment of any project financing and project development related costs.

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In 2014 and 2015, we subsequently entered into various loan agreements with solar power project entities of the joint venture pursuant to which the project entities may borrow funds for the construction of PV solar power systems in the United Kingdom. The loans bear interest at rates ranging from 6% to 8% per annum and are payable at the earlier of the sale of the associated project entities or maturity in June 2016 or December 2018, depending on the terms of the individual loan. As of December 31, 2015 and 2014, the balance outstanding on the loans was £2.8 million ($4.2 million) and £8.0 million ($12.5 million), respectively.

The joint venture is considered a variable interest entity, and our ownership interest in and loans to the project entities of the joint venture are considered variable interests. We account for our investment in the joint venture under the equity method of accounting as we concluded we are not the primary beneficiary of the joint venture given that we currently share the power to make the decisions that most significantly impact the entity's economic performance. The variable interest model may require a reconsideration as to whether we are the primary beneficiary of the variable interest entity due to changes in facts and circumstances. A failure of a project entity to repay its loan agreements by their respective maturity dates would be an event of default, if uncured, that triggers our ability to take over key decisions that would significantly impact the defaulting project entity's economic performance. Our specific rights in the event of default would include (i) a unilateral right to terminate the EPC contractor, (ii) a unilateral right to negotiate the sale of the project, and (iii) an ability to enforce our rights over all of the project entity's shares, which have been pledged as a form of security. Such a development would be a reconsideration event that could result in us concluding that we are the primary beneficiary of the defaulting project entity.

Summarized Financial Information

The following table presents summarized financial information, in the aggregate, for our significant equity method investees, as provided to us by the investees (in thousands):

	Fiscal 2015
Summary statement of operations information:	
Net sales	$7,099
Operating loss	(555)
Net income	8,936
Net income attributable to equity method investees	111,135

	As of Fiscal 2015
Summary balance sheet information:	
Current assets	$70,135
Long-term assets	1,938,785
Current liabilities	150,313
Long-term liabilities	309,169
Noncontrolling interests, including redeemable noncontrolling interests	101,520

13. Percentage-of-Completion Changes in Estimates

We recognize revenue for certain systems business sales arrangements under the percentage-of-completion method. The percentage-of-completion method of revenue recognition requires us to make estimates of net contract revenues and costs to complete our projects. In making such estimates, management judgments are required to evaluate significant assumptions including the amount of net contract revenues, the cost of materials and labor, expected labor productivity, the impact of potential variances in schedule completion, and the impact of any penalties, claims, change orders, or performance incentives. If estimated total costs on any contract are greater than the net contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of the revisions to

estimates related to net contract revenues and costs to complete contracts are recorded in the period in which the revisions to estimates are identified and the amounts can be reasonably estimated.

Changes in estimates for systems business sales arrangements accounted for under the percentage-of-completion method occur for a variety of reasons, including but not limited to (i) construction plan accelerations or delays, (ii) module cost forecast changes, (iii) cost related change orders, and (iv) changes in other information used to estimate costs. Changes in estimates could have a material effect on our consolidated statements of operations. The table below outlines the impact on gross profit of the aggregate net changes in systems business contract estimates (both increases and decreases) for the years ended December 31, 2015 and 2014 as well as the number of projects that comprise such aggregate net changes in estimates. For purposes of the following table, we only include projects with changes in estimates that have a net impact on gross profit of at least $1.0 million during the periods presented. Also included in the table is the net change in estimates as a percentage of the aggregate gross profit for such projects.

	2015	2014
Number of projects	6	9
Increases (decreases) in gross profit resulting from net changes in estimates (in thousands)	$31,928	$40,118
Net change in estimate as percentage of aggregate gross profit for associated projects	3.4 %	1.6 %

14. Solar Module Collection and Recycling Liability

We established a voluntary module collection and recycling program to collect and recycle modules sold and covered under such program once the modules reach the end of their useful lives. Historically, we included a description of our module collection and recycling obligations in customer sales contracts covered under the program. Based on the terms of these contracts, we agreed to cover the costs for the collection and recycling of qualifying solar modules, and the end-users agreed to notify us, disassemble their solar power systems, package the solar modules for shipment, and revert ownership rights over the modules back to us at the end of the modules' service lives.

For modules covered under this program, we record our collection and recycling obligation within "Cost of sales" at the time of sale based on the estimated cost to collect and recycle the covered solar modules. We estimate the cost of our collection and recycling obligations based on the present value of the expected probability weighted future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging materials, the cost of freight from the solar module installation sites to a recycling center, 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. In the periods between the time of sale and the related settlement of the collection and recycling obligation, we accrete the carrying amount of the associated liability by applying the discount rate used for its initial measurement. We classify accretion as an operating expense within "Selling, general and administrative" expense on our consolidated statement of operations. We periodically review our estimates of expected future recycling costs and may adjust our liability accordingly.

During the year ended December 31, 2015, we completed our annual cost study of obligations under our module collection and recycling program based on newly implemented recycling technologies at our manufacturing facility in Perrysburg, Ohio and reduced our associated liability by $80.0 million. The new recycling technology represents a significant improvement over previous technologies and contains a continuous flow recycling process, which increases the throughput of modules able to be recycled at a point in time. Such process improvements also result in corresponding reductions in capital, chemical, labor, maintenance, and other general recycling costs, which further contribute to the reduction in the recycling rate per module and corresponding change in the liability.

Our module collection and recycling liability was $163.4 million and $246.3 million at December 31, 2015 and 2014, respectively. During the year ended December 31, 2015, we recognized a benefit of $67.6 million to cost of sales and a benefit of $4.4 million to accretion expense from the reduction in our module collection and recycling liability, net

of the incremental costs associated with the program. During the years ended December 31, 2014 and 2013, we recognized $30.7 million and $15.1 million, respectively, in cost of sales for the estimated costs of collection and recycling for modules sold during the period. During the years ended December 31, 2014 and 2013, we also recognized accretion expense of $7.5 million and $4.6 million, respectively, associated with our module collection and recycling liability. A 1% increase in the annualized inflation rate used in our estimated future collection and recycling cost per module would increase our liability by $36.7 million, and a 1% decrease in that rate would decrease our liability by $30.7 million. The percentage of modules sold that were subject to our solar module collection and recycling liability was 1% and 56% for the years ended December 31, 2015 and 2014, respectively.

See Note 8 “Restricted Cash and Investments” to our consolidated financial statements for more information about our arrangements for funding this liability.

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15. Debt

Our long-term debt consisted of the following at December 31, 2015 and 2014 (in thousands):

			Balance (USD)	
Loan Agreement	Maturity	Loan Denomination	2015	2014
Revolving credit facility	July 2018	USD	$—	$—
Project construction credit facilities	Various	Various	218,183	75,418
Malaysian ringgit facility agreement	September 2018	MYR	54,175	88,606
Malaysian euro facility agreement	April 2018	EUR	21,869	34,112
Malaysian facility agreement	March 2016	EUR	5,100	25,818
Capital lease obligations	Various	Various	1,065	1,558
Long-term debt principal			300,392	225,512
Less: unamortized discount and issuance costs			(10,977)	(12,039)
Total long-term debt			289,415	213,473
Less: current portion			(38,090)	(51,399)
Noncurrent portion			$251,325	$162,074

Revolving Credit Facility

Our amended and restated credit agreement with several financial institutions as lenders and JPMorgan Chase Bank, N.A. as administrative agent provides us with a senior secured credit facility (the "Revolving Credit Facility") with an aggregate available amount of $700.0 million, with the right to request an increase up to $900.0 million, subject to certain conditions. Borrowings under the Revolving Credit Facility bear interest at (i) LIBOR (adjusted for Eurocurrency reserve requirements) plus a margin of 2.25% or (ii) a base rate as defined in the credit agreement plus a margin of 1.25%, depending on the type of borrowing requested. These margins are subject to adjustment depending on our consolidated leverage ratio. We had no borrowings under our Revolving Credit Facility, as of December 31, 2015 and 2014. We had issued $191.6 million and $202.5 million of letters of credit using availability under our Revolving Credit Facility, leaving $508.4 million and $397.5 million of availability at December 31, 2015 and 2014, respectively. Loans and letters of credit issued under the Revolving Credit Facility are jointly and severally guaranteed by First Solar, Inc.; First Solar Electric, LLC; First Solar Electric (California), Inc.; and First Solar Development, LLC and are secured by security interest in substantially all of the grantors' tangible and intangible assets other than certain excluded assets.

The credit agreement contains financial covenants including: a leverage ratio covenant, a minimum EBITDA covenant, and a minimum liquidity covenant. Additionally, the credit agreement contains customary non-financial covenants and certain restrictions on our ability to pay dividends. We were in compliance with all covenants of the facility as of December 31, 2015.

In addition to paying interest on outstanding principal under the Revolving Credit Facility, we are required to pay a commitment fee at a rate of 0.375% per annum, based on the average daily unused commitments under the facility. The commitment fee may also be adjusted due to changes in our consolidated leverage ratio. We also pay a letter of credit fee based on the applicable margin for Eurocurrency revolving loans on the face amount of each letter of credit and a fronting fee of 0.125%.

In June 2015, we entered into the fifth amendment (the "Amendment") to the Revolving Credit Facility. The Amendment provided for, among other things, the conversion of the prior tranche B revolving commitments into tranche A revolving commitments, an increase in the aggregate commitment amount to $700.0 million, and a maturity

date of July 15, 2018. The Amendment also contained changes to certain terms, restrictions, and covenants of the Revolving Credit Facility and provided us with the right to increase the commitments under the facility up to $900.0 million.

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Project Construction Credit Facilities

Chile

In August 2014, Parque Solar Fotovoltaico Luz del Norte SpA ("Luz del Norte"), our indirect wholly-owned subsidiary, entered into credit facilities with the Overseas Private Investment Corporation ("OPIC") and the International Finance Corporation ("IFC") to provide limited-recourse senior secured debt financing in an aggregate principal amount of up to $290.0 million for the design, development, financing, construction, testing, commissioning, operation, and maintenance of a 141 MW PV solar power plant located near Copiapó, Chile. In September 2015, Luz del Norte reduced the borrowing capacity on the credit facilities to $238.0 million.

Up to $178.0 million of the aggregate principal amount of the loans will be funded by OPIC. The OPIC commitment is comprised of fixed rate loans in an aggregate principal amount of up to $133.3 million and variable rate loans in an aggregate principal amount of up to $44.7 million. The fixed rate loans mature on September 15, 2029, and the variable rate loans mature on September 15, 2032. As of December 31, 2015 and 2014, the balances outstanding on the OPIC loans were $125.1 million and $47.3 million, respectively.

Up to $60.0 million of the aggregate principal amount of the loans will be funded by IFC. The IFC commitment is comprised of fixed rate loans in an aggregate principal amount of up to $44.9 million and variable rate loans in an aggregate principal amount of up to $15.1 million. The fixed rate loans mature on September 15, 2029, and the variable rate loans mature on September 15, 2032. As of December 31, 2015 and 2014, the balances outstanding on the IFC loans were $42.2 million and $16.0 million, respectively.

The OPIC and IFC loans are secured by liens over all of Luz del Norte's assets, which had an aggregate book value of $388.9 million, including intercompany charges, as of December 31, 2015 and by a pledge of all of the equity interests in the entity. The financing agreements contain customary representations and warranties, covenants, and events of default for comparable credit facilities. We were in compliance with all covenants related to the Luz del Norte Credit Facilities as of December 31, 2015.

In August 2014, Luz del Norte also entered into a Chilean peso facility ("VAT facility" and together with the OPIC and IFC loans, the "Luz del Norte Credit Facilities") equivalent to $65.0 million with Banco de Crédito e Inversiones to fund Chilean value added tax associated with the construction of the Luz del Norte project described above. In connection with the VAT facility, FSI provided a guaranty of substantially all payment obligations of Luz del Norte thereunder. As of December 31, 2015 and 2014, the balance outstanding on the VAT facility was $40.4 million and $12.2 million, respectively.

Japan

In September 2015, First Solar Japan GK, our wholly-owned subsidiary, entered into a construction loan facility with Mizuho Bank Ltd. for borrowings up to ¥4.0 billion ($33.2 million) for the development and construction of utility-scale PV solar power plants in Japan (the "Japan Credit Facility"). The facility matures in September 2016 and is renewable for an additional one-year period at the option of First Solar Japan GK, subject to certain conditions including timely payment of interest and compliance with all covenants. The facility is guaranteed by FSI and secured by pledges of certain projects' cash accounts and other rights in the projects. The facility contains customary representations and warranties, covenants, and events of default for comparable construction loan facilities in Japan. As of December 31, 2015, the balance outstanding on the facility was $5.3 million. We were in compliance with all covenants related to the Japan Credit Facility as of December 31, 2015.

India

In March 2015, Marikal Solar Parks Private Limited and Mahabubnagar Solar Parks Private Limited, our indirect wholly-owned subsidiaries, entered into term loan facilities with Axis Bank, as administrative agent, for combined aggregate borrowings up to 1.1 billion ($16.6 million) for the development and construction of two 10 MW PV solar power plants located in Telangana, India (the "India Credit Facilities"). The term loan facilities have a combined letter of credit sub-limit of 0.8 billion ($12.0 million), which may also be used to support construction activities. As of December 31, 2015, we had issued 0.8 billion ($11.3 million) of letters of credit under the facilities. The term loan facilities mature in December 2028 and are secured by certain assets of the borrowers, which had an aggregate book value of $90.3 million, including intercompany charges, as of December 31, 2015 and a pledge of a portion of the equity interests in the borrowers. The India Credit Facilities contain various financial covenants, including leverage ratio covenants, a debt service ratio covenant, and a fixed asset coverage ratio covenant. As of December 31, 2015, the balance outstanding on the term loan facilities was $5.2 million. We were in compliance with all covenants associated with the India Credit Facilities as of December 31, 2015.

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Malaysian Ringgit Facility Agreement

FS Malaysia, our indirect wholly-owned subsidiary, entered into a credit facility agreement ("Malaysian Ringgit Facility Agreement"), among FSI as guarantor, CIMB Investment Bank Berhad, Maybank Investment Bank Berhad, and RHB Investment Bank Berhad as arrangers with CIMB Investment Bank Berhad also acting as facility agent and security agent, and the original lenders party thereto. The loans made to FS Malaysia are secured by, among other things, FS Malaysia's leases for the lots on which our fifth and sixth manufacturing plants in Kulim, Malaysia ("Plants 5 and 6") are located and all plant, machinery, and equipment purchased by FS Malaysia with the proceeds of the facility or otherwise installed in or utilized in Plants 5 and 6, to the extent not financed, or subject to a negative pledge under a separate financing facility related to Plants 5 and 6. In addition, FS Malaysia's obligations under the Malaysian Ringgit Facility Agreement are guaranteed, on an unsecured basis, by FSI. As of December 31, 2015, buildings, machinery, equipment, and land leases with an aggregate net book value of $240.8 million were pledged as collateral for this loan.

The Malaysian Ringgit Facility Agreement contains negative covenants that, among other things, restrict, subject to certain exceptions, the ability of FS Malaysia to incur indebtedness, create liens, effect asset sales, engage in reorganizations, issue guarantees, and make loans. In addition, the agreement includes financial covenants relating to a net total leverage ratio, an interest coverage ratio, a total debt to equity ratio, a debt service coverage ratio, and tangible net worth. It also contains certain representations and warranties, affirmative covenants, and events of default provisions. We were in compliance with all covenants associated with the Malaysian Ringgit Facility Agreement as of December 31, 2015.

Malaysian Euro Facility Agreement

FS Malaysia entered into a credit facility agreement ("Malaysian Euro Facility Agreement") with Commerzbank Aktiengesellschaft and Natixis Zweigniederlassung Deutschland as arrangers and original lenders, and Commerzbank Aktiengesellschaft, Luxembourg Branch as facility agent and security agent. In connection with the Malaysian Euro Facility Agreement, FSI concurrently entered into a first demand guarantee agreement in favor of the lenders. Under this agreement, FS Malaysia's obligations related to the credit facility are guaranteed, on an unsecured basis, by FSI. At the same time, FS Malaysia and FSI also entered into a subordination agreement, pursuant to which any payment claims of FSI against FS Malaysia are subordinated to the claims of the lenders.

The Malaysian Euro Facility Agreement contains negative covenants that, among other things, restrict, subject to certain exceptions, the ability of FS Malaysia to grant liens over the equipment financed by the facilities, effect asset sales, provide guarantees, change its business, engage in mergers, consolidations, and restructurings, and enter into contracts with FSI and its subsidiaries. In addition, the agreement includes the following financial covenants: a maximum total debt to equity ratio, a maximum total leverage ratio, a minimum interest coverage ratio, and a minimum debt service coverage ratio. It also contains certain representations and warranties, affirmative covenants, and events of default provisions. We were in compliance with all covenants associated with the Malaysian Euro Facility Agreement through December 31, 2015.

Malaysian Facility Agreement

FS Malaysia entered into an export financing facility agreement ("Malaysian Facility Agreement") with a consortium of banks. FS Malaysia's obligations related to the agreement are guaranteed, on an unsecured basis, by FSI. In connection with the Malaysian Facility Agreement, all of FS Malaysia's obligations are secured by a first party, first legal charge over the machinery and equipment financed by the credit facilities, and any other documents, contracts, and agreements related to that machinery and equipment. Also in connection with the agreement, any payment claims of FSI against FS Malaysia are subordinated to the claims of the lenders. At December 31, 2015, machinery and equipment with an aggregate net book value of $1.0 million was pledged as collateral for these loans.

The Malaysian Facility Agreement contains negative covenants that, among other things, restrict, subject to certain exceptions, the ability of FS Malaysia to incur indebtedness, create liens, effect asset sales, engage in reorganizations, issue guarantees, and make loans. In addition, the Malaysian Facility Agreement includes financial covenants relating to a net total leverage ratio, an interest coverage ratio, a total debt to equity ratio, a debt service coverage ratio, and tangible net worth. The Malaysian Facility Agreement also contains certain representations and warranties, affirmative covenants, and events of default provisions. We were in compliance with all covenants associated with the Malaysian Facility Agreement as of December 31, 2015.

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Variable Interest Rate Risk

Certain of our long-term debt agreements bear interest at prime, Euro Interbank Offered Rate ("EURIBOR"), KLIBOR, LIBOR, Tokyo Interbank Offered Rate ("TIBOR"), or equivalent variable rates. A disruption of the credit environment, as previously experienced, could negatively impact interbank lending and, therefore, negatively impact these floating rates. An increase in EURIBOR would impact our cost of borrowing under our entire Malaysian Euro Facility Agreement, but would not impact our cost of borrowing of the floating-rate term loan under our Malaysian Facility Agreement as we entered into an interest rate swap contract to mitigate such risk. An increase in KLIBOR would not increase our cost of borrowing under our Malaysian Ringgit Facility Agreement as we entered into a cross-currency swap contract to mitigate such risk. An increase in prime, London Interbank Offered Rate ("LIBOR"), TIBOR, or equivalent variable rates would increase our cost of borrowing under our Revolving Credit Facility and various Project Construction Credit Facilities.

Our long-term debt borrowing rates as of December 31, 2015 were as follows:

Loan Agreement	Borrowing Rate at December 31, 2015
Revolving Credit Facility	2.86%
Luz del Norte Credit Facilities	Fixed rate loans at bank rate plus 3.50% Variable rate loans at 91-Day U.S. Treasury Bill Yield or LIBOR plus 3.50% VAT loans at bank rate plus 1.30%
Japan Credit Facility	TIBOR plus 0.5%
India Credit Facilities	Bank rate plus 2.35%
Malaysian Ringgit Facility Agreement	KLIBOR plus 2.00% (2)
Malaysian Euro Facility Agreement	EURIBOR plus 1.00%
Malaysian Facility Agreement (1)	Fixed rate facility at 4.54% Floating rate facility at EURIBOR plus 0.55% (2)
Capital lease obligations	Various

(1) Outstanding balance split equally between fixed and floating rates.

(2) Interest rate hedges have been entered into relating to these variable rates. See Note 10 "Derivative Financial Instruments" to our consolidated financial statements.

During the years ended December 31, 2015, 2014, and 2013, we paid $15.2 million, $7.6 million, and $9.3 million, respectively, of interest related to our long-term debt arrangements.

Future Principal Payments

At December 31, 2015, the future principal payments on our long-term debt, excluding payments related to capital leases, were due as follows (in thousands):

	Total Debt
2016	$38,331
2017	29,419
2018	67,692
2019	5,785
2020	11,930
Thereafter	146,170
Total long-term debt future principal payments	$299,327

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16. Commitments and Contingencies

Commercial Commitments

During the normal course of business, we enter into commercial commitments in the form of letters of credit, bank guarantees, and surety bonds to provide financial and performance assurance to third parties. Our Revolving Credit Facility provides us with an aggregate available amount of $700.0 million, with a sub-limit of $500.0 million to issue letters of credit subject to certain limits depending on the currencies of the letters of credit, at a fee based on the applicable margin for Eurocurrency revolving loans and a fronting fee. As of December 31, 2015, we had $191.6 million in letters of credit issued under our Revolving Credit Facility, leaving $308.4 million of availability which can be used for the issuance of letters of credit. The majority of these letters of credit were supporting our systems business projects. As of December 31, 2015, we also had $16.8 million in bank guarantees and letters of credit under separate agreements that were posted by certain of our foreign subsidiaries, $103.2 million of letters of credit issued under two bilateral facilities, of which $71.5 million was secured with cash, and $154.0 million in surety bonds outstanding primarily for our systems business projects. The available bonding capacity under our surety lines was $639.0 million as of December 31, 2015.

Lease Commitments

We lease our corporate headquarters in Tempe, Arizona and administrative, research and development, business development, customer support, and government affairs offices throughout the United States and the rest of the world under noncancelable operating leases. These leases may require us to pay property taxes, common area maintenance, and certain other costs in addition to base rent. We also lease certain machinery and equipment under operating and capital leases. Future minimum payments under all of our noncancelable leases are as follows as of December 31, 2015 (in thousands):

	2016	2017	2018	2019	2020	Thereafter	Total Minimum Lease Payments	Less Amounts Representing Interest	Present Value of Minimum Lease Payments	Less Current Portion of Capital Leases	Noncurrent Portion of Capital Leases
Gross operating lease obligations	$18,273	$16,025	$13,733	$10,505	$5,378	$104,860	$168,774				
Sublease income	(1,449)	(1,449)	(906)	—	—	—	(3,804)				
Net operating lease obligations	16,824	14,576	12,827	10,505	5,378	104,860	164,970				
Capital leases	540	420	97	65	—	—	1,122	(57)	1,065	(374)	691
Total	$17,364	$14,996	$12,924	$10,570	$5,378	$104,860	$166,092				

Our rent expense was $22.5 million, $18.0 million, and $14.4 million for the years ended December 31, 2015, 2014, and 2013, respectively.

Purchase Commitments

We purchase raw materials for inventory, construction materials, various services, and manufacturing equipment from a variety of vendors. During the normal course of business, in order to manage manufacturing and construction lead times and help assure an adequate supply of certain items, we enter into agreements with suppliers that either allow us to procure goods and services when we choose or that establish purchase requirements over the term of the agreement. In certain instances, the agreements with purchase requirements allow us the option to cancel, reschedule, or adjust our requirements based on our business needs prior to firm orders being placed. Consequently, only a portion of our purchase commitments are firm, noncancelable, enforceable, and legally binding. At December 31, 2015, our obligations under such agreements were $789.7 million, of which $35.2 million was for commitments related to capital expenditures. $736.0 million of our purchase obligations are due in 2016.

Product Warranties

When we recognize revenue for module or systems sales, we accrue liabilities for the estimated future costs of meeting our limited warranty obligations for both modules and the balance of the systems. We make and revise these estimates based primarily on the number of our solar modules under warranty installed at customer locations, our historical experience with warranty claims, our monitoring of field installation sites, our internal testing of and the expected future performance of our solar modules and BoS components, and our estimated replacement costs.

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From time to time, we have taken remediation actions with respect to affected modules beyond our limited warranties, 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 obligations could be material to our consolidated statements of operations if we commit to any such remediation actions.

Product warranty activities during the years ended December 31, 2015, 2014, and 2013 were as follows (in thousands):

	2015	2014	2013
Product warranty liability, beginning of period	$223,057	$198,041	$191,596
Accruals for new warranties issued	50,040	40,599	35,985
Settlements	(13,392)	(16,721)	(33,499)
Changes in estimate of product warranty liability	(27,954)	1,138	3,959
Product warranty liability, end of period	$231,751	$223,057	$198,041
Current portion of warranty liability	$38,468	$69,656	$67,097
Noncurrent portion of warranty liability	$193,283	$153,401	$130,944

We have historically estimated our limited product warranty liability for power output and defects in materials and workmanship under normal use and service conditions to have a warranty return rate of approximately 3% of modules covered under warranty. A 1% change in the estimated warranty return rate would change our module warranty liability by $71.5 million, and a 1% change in the estimated warranty return rate for BoS components would not have a material impact on the associated warranty liability.

Accrued Expenses in Excess of Product Warranty

We may also accrue expenses for the cost of any voluntary remediation programs beyond our normal product warranty. As of December 31, 2015 and 2014, accrued expenses in excess of our product warranty were $24.6 million and $30.9 million, respectively, of which $5.0 million and $7.8 million, respectively, were classified as current and included in “Accrued expenses” on our consolidated balance sheets and $19.6 million and $23.1 million, respectively, were classified as noncurrent and included in “Other liabilities” on our consolidated balance sheets. Our estimates for such remediation programs are based on an evaluation of available information including the estimated number of potentially affected solar modules, historical experience related to our remediation efforts, customer-provided data related to potentially affected systems, estimated costs for performing removal, replacement, and logistical services, and any post-sale expenses covered under our voluntary remediation program. If any of our estimates prove incorrect, we could be required to accrue additional expenses.

Performance Guarantees

As part of our systems business, we conduct performance testing of a system prior to substantial completion to confirm the system meets its operational and capacity expectations noted in the EPC agreement. In addition, we may provide an energy performance test during the first year of a system’s operation to demonstrate that the actual energy generation for the first year meets or exceeds the modeled energy expectation, after certain adjustments. If there is an underperformance event with regards to these tests, we may incur liquidated damages as a percentage of the EPC contract price. In certain instances, a bonus payment may be received at the end of the first year if the system performs above a specified level. As of December 31, 2015 and 2014, we accrued $0.3 million and $4.3 million, respectively, of estimated obligations under such arrangements, which were classified as “Other current liabilities” in the consolidated balance sheets.

As part of our O&M service offerings, we typically offer an effective availability guarantee, which stipulates that a system will be available to generate a certain percentage of total possible energy during a specific period after

adjusting for factors outside of our control as the service provider, such as weather, curtailment, outages, force majeure, and other conditions that may affect system availability. Effective availability guarantees are only offered as part of our O&M services and terminate at the end of an O&M arrangement. If we fail to meet the contractual threshold for these guarantees, we may incur liquidated damages for certain lost energy under the PPA. Our O&M agreements typically contain provisions limiting our total potential losses under an agreement, including amounts paid for liquidated damages, to a percentage of O&M fees. Many of our O&M agreements also contain provisions whereby we may receive a bonus payment if system availability exceeds a separate threshold. As of December 31, 2015 and 2014, we did not accrue any estimated obligations under our effective availability guarantees.

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Repurchase of Systems Projects

From time to time under sales agreements for a limited number of our solar power projects, we may be required to repurchase the projects if certain events occur, such as not achieving commercial operation of the project within a certain timeframe. For any sales agreements that have such conditional repurchase clauses, we will not recognize revenue on such sales agreements until the conditional repurchase clauses are of no further force or effect and all other necessary revenue recognition criteria have been met.

Contingent Consideration

In connection with our TetraSun and Solar Chile acquisitions, we agreed to pay additional amounts to sellers contingent upon achievement by the acquired businesses of certain negotiated goals, such as targeted project and module shipment volume milestones. As of December 31, 2015 and 2014, we recorded $2.5 million and $4.9 million of current liabilities, respectively, and $4.9 million and $14.7 million of long-term liabilities, respectively, for these contingent obligations based on their estimated fair value.

We continually seek to make additions to our advanced-stage project pipeline and are also actively developing our early to mid-stage project pipeline in order to secure PPAs and are also pursuing opportunities to acquire advanced-stage projects, which already have PPAs in place. In connection with such project acquisitions, we may agree to pay additional amounts to project sellers upon achievement of certain project-related milestones, such as obtaining a PPA, obtaining financing, and selling to a new owner. We recognize an estimated project acquisition contingent liability when we determine that such liability is both probable and reasonably estimable, and the carrying amount of the related project asset is correspondingly increased. As of December 31, 2015 and 2014, we recorded $6.7 million and $31.9 million of current liabilities, respectively, and $3.9 million and $2.4 million of long-term liabilities, respectively, for such contingent obligations. Any future differences between the acquisition-date contingent obligation estimate and the ultimate settlement of the obligations will be recognized primarily as an adjustment to project assets, as contingent payments are considered direct and incremental to the underlying value of the related projects.

Legal Proceedings

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

Class Action

On March 15, 2012, a purported class action lawsuit titled Smilovits v. First Solar, Inc., et al., Case No. 2:12-cv-00555-DGC, was filed in the United States District Court for the District of Arizona (hereafter “Arizona District Court”) against the Company and certain of our current and former directors and officers. The complaint was filed on behalf of persons who purchased or otherwise acquired the Company’s publicly traded securities between April 30, 2008 and February 28, 2012 (the “Class Action”). The complaint generally alleges that the defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 by making false and misleading statements regarding the Company’s financial performance and prospects. The action includes claims for damages, including interest, and an award of reasonable costs and attorneys’ fees to the putative class. The Company believes it has meritorious defenses and will vigorously defend this action.

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

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Defendants filed a motion for summary judgment on March 27, 2015. On August 11, 2015, the Arizona District Court granted defendants' motion in part and denied it in part, and certified an issue for immediate appeal to the Ninth Circuit Court of Appeals. First Solar filed a petition for interlocutory appeal with the Ninth Circuit, and that petition was granted on November 18, 2015. First Solar's opening brief is due on March 25, 2016. The Arizona District Court entered a stay of the proceedings in district court until the appeal is decided. Given the pending appeal, the need for further expert discovery, and the uncertainties of trial, we are not in a position to assess whether any loss or adverse effect on our financial condition is probable or remote or to estimate the range of potential loss, if any.

Opt-Out Action

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

The Arizona District Court has extended the deadline for responding to the complaint until after the Ninth Circuit Court of Appeals resolves the petition for appeal and/or the appeal in the Smilovits matter described above. Accordingly, we are not in a position to assess whether any loss or adverse effect on our financial condition is probable or remote or to estimate the range of potential loss, if any.

Derivative Actions

On April 3, 2012, a derivative action titled Tsevegmid v. Ahearn, et al., Case No. 1:12-cv-00417-CJB, was filed by a putative stockholder on behalf of the Company in the United States District Court for the District of Delaware (hereafter "Delaware District Court") against certain current and former directors and officers of the Company, alleging breach of fiduciary duties and unjust enrichment. The complaint generally alleges that from June 1, 2008, to March 7, 2012, the defendants caused or allowed false and misleading statements to be made concerning the Company's financial performance and prospects. The action includes claims for, among other things, damages in favor of the Company, certain corporate actions to purportedly improve the Company's corporate governance, and an award of costs and expenses to the putative plaintiff stockholder, including attorneys' fees. On April 10, 2012, a second derivative complaint was filed in the Delaware District Court. The complaint, titled Brownlee v. Ahearn, et al., Case No. 1:12-cv-00456-CJB, contains similar allegations and seeks similar relief to the Tsevegmid action. By court order on April 30, 2012, pursuant to the parties' stipulation, the Tsevegmid action and the Brownlee action were consolidated into a single action in the Delaware District Court. On May 15, 2012, defendants filed a motion to challenge Delaware as the appropriate venue for the consolidated action. On March 4, 2013, the magistrate judge issued a Report and Recommendation recommending to the court that defendants' motion be granted and that the case be transferred to the District of Arizona. On July 12, 2013, the court adopted the magistrate judge's Report and Recommendation and ordered the case transferred to the District of Arizona. The transfer was completed on July 15, 2013.

On April 12, 2012, a derivative complaint was filed in the United States District Court for the District of Arizona (hereafter "Arizona District Court"), titled Tindall v. Ahearn, et al., Case No. 2:12-cv-00769-ROS. In addition to alleging claims and seeking relief similar to the claims and relief asserted in the Tsevegmid and Brownlee actions, the Tindall complaint alleges violations of Sections 14(a) and 20(b) of the Securities Exchange Act of 1934. On April 19, 2012, a second derivative complaint was filed in the Arizona District Court, titled Nederhood v. Ahearn, et al., Case No. 2:12-cv-00819-JWS. The Nederhood complaint contains similar allegations and seeks similar relief to the

Tsevegmid and Brownlee actions. On May 17, 2012 and May 30, 2012, respectively, two additional derivative complaints, containing similar allegations and seeking similar relief as the Nederhood complaint, were filed in Arizona District Court: Morris v. Ahearn, et al., Case No. 2:12-cv-01031-JAT and Tan v. Ahearn, et al., 2:12-cv-01144-NVW.

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On July 17, 2012, the Arizona District Court issued an order granting First Solar's motion to transfer the derivative actions to Judge David Campbell, the judge to whom the Smilovits class action is assigned. On August 8, 2012, the court consolidated the four derivative actions pending in Arizona District Court, and on August 31, 2012, plaintiffs filed an amended complaint. Defendants filed a motion to stay the action on September 14, 2012. On December 17, 2012, the Arizona District Court granted Defendants' motion to stay pending resolution of the Smilovits class action. On August 13, 2013, Judge Campbell consolidated the two derivative actions transferred from the Delaware District Court with the stayed Arizona derivative actions. On February 19, 2016, the Arizona District Court issued an order lifting the stay in part. Pursuant to the February 19, 2016 order, the plaintiffs shall file an amended complaint by March 11, 2016. Defendants shall file a motion to dismiss the amended complaint by April 1, 2016. All other litigation activity, including discovery, remains stayed.

On July 16, 2013, a derivative complaint was filed in the Superior Court of Arizona, Maricopa County, titled Bargar, et al. v. Ahearn, et al., Case No. CV2013-009938, by a putative stockholder against certain current and former directors and officers of the Company. The complaint contains similar allegations to the Delaware and Arizona derivative cases, and includes claims for, among other things, breach of fiduciary duties, insider trading, unjust enrichment, and waste of corporate assets. By court order on October 3, 2013, the Superior Court of Arizona, Maricopa County granted the parties' stipulation to defer defendants' response to the complaint pending resolution of the Smilovits class action or expiration of the stay issued in the consolidated derivative actions in the Arizona District Court. On November 5, 2013, the matter was placed on the court's inactive calendar. The parties have jointly sought and obtained multiple requests to continue the action on the inactive calendar. Most recently, on November 24, 2015, the court entered an order continuing the action on the inactive calendar until March 31, 2016.

The Company believes that plaintiffs in the derivative actions lack standing to pursue litigation on behalf of First Solar. The derivative actions are still in the initial stages and there has been no discovery. Accordingly, we are not in a position to assess whether any loss or adverse effect on our financial condition is probable or remote or to estimate the range of potential loss, if any.

Department of Labor Proceeding

In March 2015, the Wage and Hour Division of the U.S. Department of Labor (the "DOL") notified our wholly-owned subsidiary First Solar Electric, LLC ("FSE") of the DOL's findings following a labor standards compliance review under the Davis Bacon and Related Acts at the 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 currently 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.

17. Stockholders' Equity

Preferred Stock

We have authorized 30,000,000 shares of undesignated preferred stock, $0.001 par value, none of which was issued and outstanding at December 31, 2015 and 2014. Our board of directors is authorized to determine the rights, preferences, and restrictions on any series of preferred stock that we may issue.

Common Stock

We have authorized 500,000,000 shares of common stock, $0.001 par value, of which 101,766,797 and 100,288,942 shares were issued and outstanding at December 31, 2015 and 2014, respectively. Each share of common stock is entitled to a single vote. We have not declared or paid any dividends through December 31, 2015.

During June 2013, we completed an equity offering of 9,747,000 shares of our common stock at a public offering price of $46.00 per share. Net proceeds from the equity offering were $428.2 million, after deducting $17.9 million of underwriting discounts and offering expenses of $2.2 million. We have used proceeds from this offering for general corporate purposes, which includes items such as acquisitions of under development PV solar power system projects, investments in PV solar power system projects that will be jointly developed with strategic partners, and capital expenditures or strategic investments to develop certain business units and expand in new geographies.

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18. Share-Based Compensation

We measure share-based compensation cost at the grant date based on the fair value of the award and recognize this cost as share-based compensation expense over the required or estimated service period for awards expected to vest. The share-based compensation expense that we recognized in our consolidated statements of operations for the years ended December 31, 2015, 2014, and 2013 was as follows (in thousands):

	2015	2014	2013
Cost of sales	$10,713	$11,713	$17,116
Research and development	4,109	4,417	5,760
Selling, general and administrative	30,052	27,660	31,426
Production start-up	25	20	283
Total share-based compensation expense	$44,899	$43,810	$54,585

The following table presents our share-based compensation expense by type of award for the years ended December 31, 2015, 2014, and 2013 (in thousands):

	2015	2014	2013
Restricted and performance stock units	$40,393	$42,852	$51,433
Unrestricted stock	1,326	1,326	1,253
Stock purchase plan	1,254	1,003	998
	42,973	45,181	53,684
Net amount released from (absorbed into) inventory	1,926	(1,371)	901
Total share-based compensation expense	$44,899	$43,810	$54,585

Share-based compensation expense capitalized in inventory was $3.4 million and $5.3 million as of December 31, 2015 and 2014, respectively. As of December 31, 2015, we had $28.3 million of unrecognized share-based compensation expense related to unvested restricted and performance stock units and rights under our stock purchase plan (the “Stock Purchase Plan”), which we expect to recognize as expense over a weighted-average period of approximately 0.7 years.

The estimated forfeiture rate used to record compensation expense is based on historical forfeitures and is adjusted periodically based on actual results. At December 31, 2015 and 2014, our forfeiture rate was 9.5%.

During the years ended December 31, 2015, 2014, and 2013, we recognized an income tax benefit in our statement of operations of $15.3 million, $15.8 million, and $19.4 million, respectively, related to share-based compensation expense.

We authorize our transfer agent to issue new shares, net of shares withheld for minimum statutory withholding taxes as appropriate, for the vesting of restricted and performance stock units or grants of unrestricted stock.

Share-Based Compensation Plans

During 2010, we adopted our 2010 Omnibus Incentive Compensation Plan (“the 2010 Omnibus Plan”). Under the 2010 Omnibus Plan, directors, associates, and consultants of First Solar, Inc. (including any of its subsidiaries) were eligible to participate. The 2010 Omnibus Plan was administered by the compensation committee of our board of directors (or any other committee designated by our board of directors), which was authorized to, among other things, determine who would receive grants and determine the exercise price and vesting schedule of the awards made under the 2010 Omnibus Plan. The 2010 Omnibus Plan provided for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock units, performance units, cash incentive awards, and other equity-based and equity-related awards.

During 2015, the 2010 Omnibus Plan was replaced by our 2015 Omnibus Incentive Compensation Plan ("the 2015 Omnibus Plan"). Upon approval by our shareholders, the 2010 Omnibus Plan share reserve was transferred to the 2015 Omnibus Plan and any forfeitures under the 2010 Omnibus Plan become available for grant under the 2015 Omnibus Plan. This new plan differs from prior equity compensation plans in that the 2015 Omnibus Plan (i) alters the definition of "Change of Control" to increase the percentage threshold for triggering a change of control and to better reflect the current ownership of our most significant stockholders, (ii) alters the number of, and manner in which we calculate, the 2015 Omnibus Plan share reserve (A) to eliminate recycling of shares surrendered or tendered to satisfy exercise price payments or applicable tax withholding with respect to options and stock appreciation rights ("SARs") and (B) to count each share in respect of which a stock-settled SAR was exercised against

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the maximum aggregate limit of shares that may be awarded under the 2015 Omnibus Plan, regardless of the number of shares actually delivered upon settlement of such stock-settled SAR, (iii) reflects changes (actual or anticipated in the near future) in the law (such as clawback provisions that would satisfy Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as codified in Section 10D of the Exchange Act, and Section 304 of the Sarbanes-Oxley Act of 2002), (iv) clarifies that, to satisfy the exercise price due upon a participant's exercise of a vested option under the 2015 Omnibus Plan, the Company may withhold from the shares otherwise deliverable to such participant a number of shares with an equivalent fair market value to such exercise price, (v) clarifies that for any awards under the 2015 Omnibus Plan that are subject to vesting based on the achievement of performance goals (or any performance compensation awards as described below) and for which the compensation committee has provided for the payment of dividends or dividend equivalents, participants would not be entitled to payment of such dividends or dividend equivalents unless and to the extent that such performance goals are achieved or otherwise deemed to be satisfied, and (vi) responds to other compensation and governance trends.

Under the 2015 Omnibus Plan, directors, officers, employees, and consultants of FSI (including any of its subsidiaries) are eligible to participate. The 2015 Omnibus Plan is administered by the compensation committee of our board of directors (or any other committee designated by our board of directors), which is authorized to, among other things, determine who will receive grants and determine the exercise price and vesting schedule of the awards made under the 2015 Omnibus Plan. Our board of directors may amend, modify, or terminate the 2015 Omnibus Plan without the approval of our stockholders, except stockholder approval is required for amendments that would increase the maximum number of shares of our common stock available for awards under the 2015 Omnibus Plan, increase the maximum number of shares of our common stock that may be delivered by incentive stock options, or modify the requirements for participation in the 2015 Omnibus Plan.

The 2015 Omnibus Plan provides for the grant of incentive stock options, non-qualified stock options, SARs, restricted shares, restricted stock units, performance units, cash incentive awards, performance compensation awards, and other equity-based and equity-related awards. The maximum number of new shares of our common stock that may be delivered by awards granted under the 2015 Omnibus Plan is 5,183,172. Also, the shares underlying forfeited, expired, terminated, or canceled awards, or shares surrendered as payment for taxes required to be withheld become available for new award grants. We may not grant awards under the 2015 Omnibus Plan after 2025, which is the tenth anniversary of the 2015 Omnibus Plan's approval by our stockholders. At December 31, 2015, 5,176,136 shares were available for grant under the 2015 Omnibus Plan.

Restricted Stock Units and Performance Based Restricted Stock Units

We issue shares to the holders of restricted units on the date the restricted stock units vest. The majority of shares issued are net of the minimum statutory withholding requirements, which we pay on behalf of our associates. As a result, the actual number of shares issued will be less than the number of restricted stock units granted. Prior to vesting, restricted stock units do not have dividend equivalent rights or voting rights, and the shares underlying the restricted stock units are not considered issued and outstanding.

Some of our restricted stock units below are characterized as performance based restricted stock units. Our board of directors approved and adopted the Key Senior Talent Equity Performance Program ("KSTEPP"), a performance unit program under our prior 2010 Omnibus Plan applicable to our senior executives. The KSTEPP rewards achievement of certain performance objectives aligned to the success of our Long Term Strategic Plan. The performance objectives for the rolling annual measurement periods include KSTEPP adjusted operating income, sales in key geographic markets, and cash adjusted return on invested capital. The KSTEPP awards were designed so that the attainment of the performance criteria required for full or partial vesting would be attained over time. In November 2015, the compensation committee of our board of directors certified the Company's achievement of the partial KSTEPP vesting conditions for the rolling annual period ended September 30, 2015. Accordingly, one-third of each KSTEPP award

vested in 2015, and each KSTEPP participant received one share of common stock for each vested KSTEPP performance unit, net of any forfeitures or tax withholdings.

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The following is a summary of our restricted and performance stock unit activity for the year ended December 31, 2015:

	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested restricted stock units at December 31, 2014	4,319,461	$29.80
Restricted stock units granted	444,942	60.91
Restricted stock units vested	(1,629,123)	33.88
Restricted stock units forfeited	(160,787)	41.32
Unvested restricted stock units at December 31, 2015	2,974,493	$31.59

We estimate the fair value of our restricted stock unit awards based on our stock price on the grant date. For the years ended December 31, 2014 and 2013, the weighted average grant-date fair value for restricted stock units granted in such years was $57.74 and $29.56, respectively. The total fair value of restricted stock units vested during 2015, 2014, and 2013 was $96.4 million, $66.8 million, and $33.6 million, respectively.

Stock Awards

During the years ended December 31, 2015, 2014, and 2013, we awarded 25,376, 21,879, and 31,891, respectively, of fully vested, unrestricted shares of our common stock to the independent members of our board of directors. We recognized $1.3 million, $1.3 million, and $1.3 million of share-based compensation expense for these awards during the years ended December 31, 2015, 2014, and 2013, respectively.

Stock Purchase Plan

Our shareholders approved our Stock Purchase Plan for employees in June 2010. The plan allows employees to purchase our common stock through payroll withholdings over a six-month offering period at 85% of the closing share price on the last day of the offering period (the “exercise date”). We estimate the fair value of the Stock Purchase Plan compensation expense based primarily on our stock price on the exercise date.

19. Benefit Plans

We offer a 401(k) retirement savings plan into which all of our U.S. associates (our term for employees) can voluntarily contribute a portion of their annual salaries and wages, subject to legally prescribed dollar limits. Our contributions to our associates’ plan accounts are made at the discretion of our board of directors and are based on a percentage of the participating associates’ contributions. Associate contributions are matched dollar-for-dollar up to the first 4%. Our contributions to the plan were $7.4 million, $6.5 million, and $6.7 million for the years ended December 31, 2015, 2014, and 2013, respectively. Our 401(k) retirement savings plan does not offer participants an option to invest in our common stock.

We also offer certain retirement savings plans to certain non-U.S. associates. These plans are managed in accordance with applicable local statutes and practices and are defined contribution plans. Our contributions to these plans were $0.9 million, $0.9 million, and $0.9 million during the years ended December 31, 2015, 2014, and 2013, respectively.

20. Income Taxes

The U.S. and non-U.S. components of our income before income taxes for the years ended December 31, 2015, 2014, and 2013 were as follows (in thousands):

	2015	2014	2013
U.S. income	$126,958	$139,137	$78,346
Non-U.S. income	392,877	292,964	302,633
Income before income taxes	$519,835	$432,101	$380,979

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The components of our income tax (benefit) expense for the years ended December 31, 2015, 2014, and 2013 were as follows (in thousands):

	2015	2014	2013
Current expense:			
Federal	$20,208	$15,492	$44,518
State	4,172	1,699	836
Foreign	23,215	8,123	5,622
Total current expense	47,595	25,314	50,976
Deferred (benefit) expense:			
Federal	(716)	2,926	(12,022)
State	3,118	5,133	2,229
Foreign	(56,153)	(2,185)	(11,085)
Total deferred (benefit) expense	(53,751)	5,874	(20,878)
Total income tax (benefit) expense	$(6,156)	$31,188	$30,098

The current tax expense listed above does not reflect income tax benefits of $14.6 million, $24.5 million, and $21.0 million for the years ended December 31, 2015, 2014, and 2013, respectively, related to excess tax deductions on share-based compensation as we recorded such benefits directly to additional paid-in capital.

We use the deferral method of accounting for investment tax credits under which the credits are recognized as reductions in the carrying value of the related assets. The use of the deferral method also results in a basis difference from the recognition of a deferred tax asset and an immediate income tax benefit for the future tax depreciation of the related assets. Such basis differences are accounted for pursuant to the income statement method. During 2015, we generated a $19.2 million investment tax credit from placing a project into service.

Our Malaysian subsidiary has been granted a long-term tax holiday that expires in 2027. The tax holiday, which generally provides for a full exemption from Malaysian income tax, is conditional upon our continued compliance in meeting certain employment and investment thresholds, which we are currently in compliance with and expect to continue to comply with through the expiration of the tax holiday in 2027.

Income tax expense decreased by $37.3 million during 2015 compared to 2014. The decrease in income tax expense was primarily the result of a $41.7 million discrete tax benefit associated with the receipt of a private letter ruling. Income tax expense increased by $1.1 million during 2014 compared to 2013. The increase in income tax expense was primarily attributable to an increase in pretax book income earned in higher tax jurisdictions in 2014, partially offset by a discrete tax benefit due to the expiration of the statute of limitations for various uncertain tax positions.

Our income tax results differed from the amount computed by applying the U.S. statutory federal income tax rate of 35.0% to our income before income taxes for the following reasons for the years ended December 31, 2015, 2014, and 2013 (in thousands):

	2015		2014		2013	
	Tax	Percent	Tax	Percent	Tax	Percent
Statutory income tax expense	$181,936	35.0 %	$151,235	35.0 %	$133,342	35.0 %
Non-deductible expenses	4,161	0.8 %	3,001	0.7 %	707	0.2 %
State tax, net of federal benefit	5,437	1.0 %	4,549	1.0 %	1,579	0.4 %
Effect of tax holiday	(126,324)	(24.3)%	(80,049)	(18.5)%	(80,076)	(21.0)%
Foreign tax rate differential	(9,637)	(1.9)%	(7,524)	(1.7)%	(19,839)	(5.2)%
Effect of private letter ruling	(41,694)	(8.0)%	—	— %	—	— %
Tax credits	(2,566)	(0.5)%	(3,014)	(0.7)%	(13,267)	(3.5)%
Other	(9,670)	(1.8)%	(5,369)	(1.2)%	1,606	0.4 %

Impact of changes in valuation allowance	(7,799	)	(1.5	)%	(31,641	)	(7.4	)%	6,046	1.6 %
Reported income tax (benefit) expense	$(6,156	)	(1.2	)%	$31,188		7.2	%	$30,098	7.9 %

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For the years ended December 31, 2015 and 2014, the tax benefit from the foreign tax rate differential primarily related to our income generated in Malaysia calculated at the statutory tax rate of 25.0%, compared to the U.S. statutory tax rate of 35.0%. For the year ended December 31, 2013, the tax benefit from the foreign tax rate differential primarily related to our income generated in Germany and Malaysia calculated at statutory tax rates of 29.6% and 25.0%, respectively, compared to the U.S. statutory tax rate of 35.0%.

During the years ended December 31, 2015 and 2014, we made net tax payments of $30.8 million and $17.0 million, respectively. During the year ended December 31, 2013, we received a net tax refund of $1.6 million.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities calculated for U.S. GAAP financial reporting purposes and the amounts calculated for preparing our income tax returns in accordance with tax regulations. The items that gave rise to our deferred taxes for the years ended December 31, 2015 and 2014 were as follows (in thousands):

	2015	2014
Deferred tax assets:		
Goodwill	$32,022	$39,299
Compensation	38,938	38,890
Accrued expenses	74,432	59,517
Tax credits	211,066	174,633
Net operating losses	95,562	86,268
Inventory	5,961	11,435
Deferred expenses	8,559	3,778
Property, plant and equipment	38,869	48,026
Long-term contracts	2,522	11,120
Other	8,622	5,736
Deferred tax assets, gross	516,553	478,702
Valuation allowance	(121,524)	(129,323)
Deferred tax assets, net of valuation allowance	395,029	349,379
Deferred tax liabilities:		
Capitalized interest	(4,270)	(5,216)
Acquisition accounting / basis difference	(3,527)	(13,780)
Restricted investments and derivatives	(14,128)	(18,124)
Investments in foreign subsidiaries	(379)	(967)
Equity in earnings	(21,895)	(1,020)
Other	(2,388)	(5,044)
Deferred tax liabilities	(46,587)	(44,151)
Net deferred tax assets and liabilities	$348,442	$305,228

In April 2015, we received a private letter ruling in a foreign jurisdiction related to the timing of the deduction for certain of our obligations. In accordance with this ruling, we will begin treating these obligations as deductible when we actually make payments on the obligations, which are expected to occur subsequent to the expiration of the tax holiday. As a result, we recorded a benefit of $41.7 million through the tax provision to establish a deferred tax asset associated with the future deductibility of these obligations.

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In December 2015, FS Malaysia prepaid a $96.6 million intellectual property royalty to First Solar, Inc. As a result of this transaction, FS Malaysia and First Solar, Inc. expect to recognize corresponding amounts for royalty expense and royalty revenue in 2016.

Changes in our valuation allowance against our deferred tax assets were as follows during the years ended December 31, 2015, 2014, and 2013 (in thousands):

	2015	2014	2013
Valuation allowance, beginning of year	$129,323	$160,965	$154,919
Additions	368	2,068	15,059
Reversals	(8,167)	(33,710)	(9,013)
Valuation allowance, end of year	$121,524	$129,323	$160,965

We maintained a valuation allowance of $121.5 million and $129.3 million as of December 31, 2015 and 2014, respectively, against certain of our deferred tax assets, as it is more likely than not that such amounts will not be fully realized. In 2015, the valuation allowance decreased by $7.8 million primarily due to (i) the partial release of valuation allowances in jurisdictions with current year operating income and (ii) a reduction of deferred tax assets with a full valuation allowance due to a decrease in foreign exchange rates. These decreases were partially offset by an increase in valuation allowances due to current year operating losses.

Except as required under U.S. tax law, we do not provide for U.S. or non-U.S. taxes on the cumulative undistributed earnings of our foreign subsidiaries that have not been previously taxed since we intend to invest such undistributed earnings indefinitely or repatriation of such earnings would not give rise to additional U.S. or non-U.S. taxes. If our intent changes or if these funds are needed for our U.S. or non-U.S. operations, we would be required to accrue or pay U.S. or non-U.S. taxes on some or all of these undistributed earnings. Accordingly, we have not provided for $1.0 billion of deferred income taxes on $2.9 billion of undistributed earnings of our foreign subsidiaries. These taxes would be required to be recognized when and if we determine that these amounts are not indefinitely reinvested.

At December 31, 2015, we had federal and aggregate state net operating loss carryforwards of $129.5 million and $23.8 million, respectively. At December 31, 2014, we had federal and aggregate state net operating loss carryforwards of $117.3 million and $20.5 million, respectively. If not used, the federal net operating loss carryforwards will expire beginning in 2028, and the state net operating loss carryforwards will begin to expire in 2016. The utilization of a portion of our net operating loss carryforwards is subject to an annual limitation under Section 382 of the Internal Revenue Code due to changes in ownership. Based on our analysis, we do not believe such annual limitation will impact our realization of the net operating loss carryforwards as we anticipate utilizing them prior to 2028. At December 31, 2015 our deferred tax assets do not include $24.7 million of excess tax deductions from employee stock option exercises and vested restricted stock units that are included in our net operating loss carryforwards. Our stockholders' equity will increase by up to $24.7 million if and when we ultimately realize these excess tax benefits. We use tax law ordering to determine when excess tax benefits have been realized.

At December 31, 2015 we had gross federal and state research and development credit carryforwards of $32.7 million, U.S. foreign tax credit carryforwards of $167.0 million, and investment tax credits of $56.9 million available to reduce future federal and state income tax liabilities. If not used, the research and development credits, investment tax credits, and U.S. foreign tax credits will begin to expire in 2026 through 2034, 2026 through 2034, and 2016 through 2024, respectively.

A reconciliation of the beginning and ending amount of liabilities associated with uncertain tax positions for the years ended December 31, 2015, 2014, and 2013 is as follows (in thousands):

	2015	2014	2013
Unrecognized tax benefits, beginning of year	$162,029	$183,239	$174,181

Increases related to prior year tax positions	484	522	6,178
Decreases related to prior year tax positions	(2,693)	(2,513)	(15,245)
Decreases from lapse in statute of limitations	(13,827)	(28,649)	—
Decreases relating to settlements with authorities	(20,485)	(3,111)	—
Increases related to current tax positions	16,247	12,541	18,125
Unrecognized tax benefits, end of year	$141,755	$162,029	$183,239

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If recognized, $141.8 million of unrecognized tax benefits would reduce our annual effective tax rate. Due to the uncertain and complex application of tax laws and regulations, it is possible that the ultimate resolution of uncertain tax positions may result in liabilities that could be materially different from these estimates. In such an event, we will record additional tax expense or tax benefit in the period in which such resolution occurs. Our policy is to recognize any interest and penalties that we might incur related to our tax positions as a component of income tax expense. We did not accrue any penalties related to these unrecognized tax benefits during 2015, 2014, or 2013. We also did not accrue any interest related to these unrecognized tax benefits in 2015 and 2014. We accrued interest related to these unrecognized tax benefits of $0.6 million during 2013. Within the next twelve months, we do not expect to recognize any previously unrecognized tax benefits.

We are subject to audit by U.S. federal, state, local, and foreign tax authorities. During the year ended December 31, 2015, we settled a tax audit in Spain, which resulted in a discrete tax expense of $3.0 million. We are currently under examination in Chile and also continue to have discussions with the German tax authorities regarding an ongoing dispute. We believe that adequate provisions have been made for any adjustments that may result from tax examinations. However, the outcome of tax audits cannot be predicted with certainty. If any issues addressed by our tax audits are not resolved in a manner consistent with our expectations, we could be required to adjust our provision for income taxes in the period such resolution occurs.

The following table summarizes the tax years that are either currently under audit or remain open and subject to examination by the tax authorities in the most significant jurisdictions in which we operate:

	Tax Years
Australia	2011 - 2015
Germany	2010 - 2014
Malaysia	2010 - 2014
United States	2008 - 2009; 2012 - 2014

In certain of the jurisdictions noted above, we operate through more than one legal entity, each of which has different open years subject to examination. The table above presents the open years subject to examination for the most material of the legal entities in each jurisdiction. Additionally, it is important to note that tax years are technically not closed until the statute of limitations in each jurisdiction expires. In the jurisdictions noted above, the statute of limitations can extend beyond the open years subject to examination.

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21. Net Income per Share

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

The calculation of basic and diluted net income per share for the years ended December 31, 2015, 2014, and 2013 was as follows (in thousands, except per share amounts):

	2015	2014	2013
Basic net income per share			
Numerator:			
Net income	$546,421	$395,964	$350,718
Denominator:			
Weighted-average common stock outstanding	100,886	100,048	93,697
Diluted net income per share			
Denominator:			
Weighted-average common stock outstanding	100,886	100,048	93,697
Effect of restricted and performance stock units and stock purchase plan shares	929	1,595	1,771
Weighted-average shares used in computing diluted net income per share	101,815	101,643	95,468

	2015	2014	2013
Per share information – basic:			
Net income per share	$5.42	$3.96	$3.74
Per share information – diluted:			
Net income per share	$5.37	$3.90	$3.67

The following table summarizes the potential shares of common stock that were excluded from the computation of diluted net income per share for the years ended December 31, 2015, 2014, and 2013 as they would have had an anti-dilutive effect (in thousands):

	2015	2014	2013
Anti-dilutive shares	48	70	86

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22. Comprehensive Income and Accumulated Other Comprehensive Income

Comprehensive income, which includes foreign currency translation adjustments, unrealized gains and losses on available-for-sale securities, and unrealized gains and losses on derivative instruments designated and qualifying as cash flow hedges, the impact of which has been excluded from net income and reflected as components of stockholders' equity, was as follows for the years ended December 31, 2015, 2014, and 2013 (in thousands):

	2015	2014	2013
Net income	$546,421	$395,964	$350,718
Other comprehensive (loss) income, net of tax:			
Foreign currency translation adjustments	(16,432)	(19,147)	4,295
Unrealized (loss) gain on marketable securities and restricted investments for the period, net of tax of $1,248, $(6,644), and $3,334	(15,413)	90,868	(39,685)
Less: reclassification for gains included in net income, net of tax of $0, $83, and $0	(2)	(127)	—
Unrealized (loss) gain on marketable securities and restricted investments	(15,415)	90,741	(39,685)
Unrealized (loss) on derivative instruments for the period, net of tax of $(207), $(711), and $(2,387)	(8,572)	(1,777)	(596)
Less: reclassification for losses included in net income, net of tax of $2,278, $(150), and $3,475	5,759	6,099	31
Unrealized (loss) gain on derivative instruments	(2,813)	4,322	(565)
Other comprehensive (loss) income, net of tax	(34,660)	75,916	(35,955)
Comprehensive income	$511,761	$471,880	$314,763

The following tables reflect the changes in accumulated other comprehensive income, net of tax, for the years ended December 31, 2015 and 2014 (in thousands):

	Foreign Currency Translation Adjustment	Unrealized Gain (Loss) on Marketable Securities	Unrealized Gain (Loss) on Derivative Instruments	Total
Balance as of December 31, 2013	$(34,190)	$11,558	$(3,144)	$(25,776)
Other comprehensive (loss) income before reclassifications	(19,147)	90,868	(1,777)	69,944
Amounts reclassified from accumulated other comprehensive income	—	(127)	6,099	5,972
Net other comprehensive (loss) income	(19,147)	90,741	4,322	75,916
Balance as of December 31, 2014	(53,337)	102,299	1,178	50,140
Other comprehensive loss before reclassifications	(16,432)	(15,413)	(8,572)	(40,417)
Amounts reclassified from accumulated other comprehensive income	—	(2)	5,759	5,757
Net other comprehensive loss	(16,432)	(15,415)	(2,813)	(34,660)
Balance as of December 31, 2015	$(69,769)	$86,884	$(1,635)	$15,480

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Details of Accumulated Other Comprehensive Income	Amounts Reclassified for the Year Ended December 31, 2015	2014	Income Statement Line Item
(Losses) and gains on marketable securities and restricted investments:			
	$2	$210	Other expense, net
	—	83	Tax expense
	$2	$127	Total, net of tax
Gains and (losses) on derivative contracts:			
Foreign exchange forward contracts	$1,782	$—	Net sales
Foreign exchange forward contracts	5,509	(501)	Cost of sales
Interest rate and cross currency swap contracts	(10,135)	(698)	Interest expense, net
Cross currency swap contract	(637)	(5,050)	Foreign currency (loss) gain, net
	(3,481)	(6,249)	Total before tax
	(2,278)	150	Tax expense
	$(5,759)	$(6,099)	Total, net of tax

23. Segment and Geographical Information

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. 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 temporarily own and operate certain of our PV solar power systems for a period of time based on strategic opportunities.

Our Chief Operating Decision Maker (“CODM”), consisting of certain members of our senior executive officers, views both the manufacturing of solar modules from our components segment and our ability to provide customers with a complete PV solar power system through our fully integrated systems segment as the primary drivers of our resource allocation, profitability, and cash flows. Our components segment contributes to our operating results by providing the fundamental technologies and solar modules that drive our business, and our systems segment contributes to our operating results by using these modules as part of a range of comprehensive PV solar energy solutions to meet our customers’ needs.

In our reportable segment financial disclosures, we include an allocation of net sales value for all solar modules manufactured by our components segment and installed in projects sold or built by our systems segment in the net sales of our components segment. In the gross profit of our reportable segment disclosures, we include the corresponding cost of sales value for the solar modules installed in projects sold or built by our systems segment in the components segment. The cost of solar modules is comprised of the manufactured cost incurred by our components segment.

After we have determined the amount of revenue earned for our systems projects following the applicable accounting guidance for the underlying sales arrangements, we allocate module revenue from the systems segment to the components segment based on how our CODM strategically views these segments. The amount of module revenue allocated from the systems segment to the components segment approximates the average selling price for such solar modules as if the modules were sold to a third-party EPC customer. In order to develop our estimate of the average selling price used for this revenue allocation, we utilize a combination of our actual third-party module sales transactions, our competitor benchmarking, and our internal pricing lists used to provide module price quotes to potential customers. This allocation methodology and the estimated average selling prices are consistent with how our CODM views the value proposition our components segment brings to a utility-scale systems project and how our CODM reviews financial information to assess the performance of the components segment.

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Our components and systems segments have certain of their own dedicated administrative key functions, such as accounting, legal, finance, project finance, human resources, procurement, and marketing. Costs for these functions are recorded and included within the respective selling, general and administrative costs for our components and systems segments. Our corporate key functions consist primarily of company-wide corporate tax, corporate treasury, corporate accounting/finance, corporate legal, investor relations, corporate communications, and executive management functions. These corporate functions and the assets supporting such functions benefit both the components and systems segments. We allocate corporate costs to the components and systems segments as part of selling, general and administrative costs, based upon the estimated benefits provided to each segment from these corporate functions. We determine the estimated benefits provided to each segment for these corporate costs based upon a combination of the estimated time spent by corporate employees supporting each segment and the average relative selling, general and administrative costs incurred by each segment before such corporate allocations. Infrequent and other miscellaneous costs including restructuring and manufacturing excursions are included in the components or systems segment operating results based upon which segment incurred the underlying costs.

Financial information about our reportable segments during the years ended December 31, 2015, 2014, and 2013 was as follows (in thousands):

	Year Ended December 31, 2015		
	Components	Systems	Total
Net sales	$1,389,579	$2,189,416	$3,578,995
Gross profit (1)	347,853	571,414	919,267
Depreciation and amortization expense	243,898	14,124	258,022
Income before income taxes (1)	171,817	348,018	519,835
Goodwill	16,152	68,833	84,985
Total assets	4,037,955	3,278,376	7,316,331
	Year Ended December 31, 2014		
	Components	Systems	Total
Net sales	$1,102,674	$2,288,513	$3,391,187
Gross profit	93,510	731,431	824,941
Depreciation and amortization expense	223,381	23,268	246,649
(Loss) income before income taxes	(105,531)	537,632	432,101
Goodwill	16,152	68,833	84,985
Total assets	4,168,060	2,552,931	6,720,991
	Year Ended December 31, 2013		
	Components	Systems	Total
Net sales	$1,173,947	$2,135,669	$3,309,616
Gross profit	88,506	776,126	864,632
Depreciation and amortization expense	211,357	27,417	238,774
(Loss) income before income taxes	(221,230)	602,209	380,979

(1) The operating results for our components segment for the year ended December 31, 2015 include the impact of the $80.0 million reduction in our module collection and recycling liability. See Note 14 “Solar Module Collection and Recycling Liability” to our consolidated financial statements for more information regarding the change in this liability.

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Product Revenue

The following table sets forth the total amounts of solar module and solar power system net sales recognized for the years ended December 31, 2015, 2014, and 2013. For the purposes of the following table, (i) "Solar module revenue" is composed of total revenues from the sale of solar modules to third parties, which does not include any systems segment product or service offerings, and (ii) "Solar power system revenue" is composed of total revenues from the sale of our PV solar power systems and related products and services, including the solar modules installed in such solar power systems along with any revenue generated from our PV solar power systems (in thousands):

	2015	2014	2013
Solar module revenue	$227,461	$228,319	$380,869
Solar power system revenue	3,351,534	3,162,868	2,928,747
Net sales	$3,578,995	$3,391,187	$3,309,616

The following table presents net sales for the years ended December 31, 2015, 2014, and 2013 by geographic region, which is based on the customer country of invoicing (in thousands):

	2015	2014	2013
United States	$3,117,797	$3,042,006	$2,832,102
Germany	63,709	121,941	142,028
India	134,462	44,118	8,253
Australia	185,064	157,152	604
France	—	8,409	35,772
Canada	6,188	7,085	264,573
United Arab Emirates	—	569	21,137
Honduras	48,773	—	—
All other foreign countries	23,002	9,907	5,147
Net sales	$3,578,995	$3,391,187	$3,309,616

The following table presents long-lived assets, which includes property, plant and equipment, PV solar power systems, and project assets and deferred project costs as of December 31, 2015 and 2014 by geographic region, based on the physical location of the assets (in thousands):

	2015	2014
United States	$1,434,891	$1,206,333
Malaysia	788,086	936,482
Chile	270,623	103,604
All other foreign countries	183,354	59,664
Long-lived assets	$2,676,954	$2,306,083

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24. Concentrations of Risks

Customer Concentration. The following customers each comprised 10% or more of our total net sales and/or 10% or more of our total accounts receivable during the years ended December 31, 2015, 2014, and 2013 (dollars in thousands):

	2015				2014				2013	
	Net Sales	% of Total NS	A/R Outstanding	% of Total A/R	Net Sales	% of Total NS	A/R Outstanding	% of Total A/R	Net Sales	% of Total NS
Customer #1	*	*	$ 69,452	15 %	*	*	*	*	*	*
Customer #2	*	*	*	*	*	*	$ 18,549	14 %	*	*
Customer #3	$ 1,060,074	30 %	$ 96,956	21 %	$ 1,065,862	31 %	*	*	*	*
Customer #4	*	*	*	*	$ 524,678	15 %	$ 32,612	24 %	$ 664,669	20 %
Customer #5	*	*	*	*	*	*	$ 17,199	13 %	*	*
Customer #6	$ 946,820	26 %	$ 216,296	48 %	$ 467,941	14 %	*	*	$ 584,638	18 %

* Net sales and/or accounts receivable to these customers were less than 10% of our total net sales and/or accounts receivable during the period.

Geographic Risk. During 2015, our third-party solar modules net sales were predominantly in India and Great Britain, and our solar power system net sales were predominantly in the United States. This concentration of our net sales in a limited number of geographic regions exposes us to local economic, public policy, and regulatory risks in such regions.

Production. Our products include components that are available from a limited number of suppliers or sources. Shortages of essential components could occur due to increases in demand or interruptions of supply, thereby impairing our ability to meet customer demand for our products. Our solar modules are produced in facilities in Perrysburg, Ohio and Kulim, Malaysia. Damage to or disruption of these facilities could interrupt our business and impair our ability to generate net sales.

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INDEX TO EXHIBITS

Set forth below is a list of exhibits that are being filed or incorporated by reference into this Annual Report on Form 10-K:

Exhibit Number		Exhibit Description	Incorporated by Reference				Filed Herewith
			Form	File No.	Date of First Filing	Exhibit Number	
3.1		Amended and Restated Certificate of Incorporation of First Solar, Inc.	S-1/A	333-135574	9/18/06	3.1	
3.2		Amended and Restated Bylaws of First Solar, Inc.	—	—	—	—	X
4.4	†	Facility Agreement dated May 6, 2008 between First Solar Malaysia Sdn. Bhd., as borrower, and IKB Deutsche Industriebank AG, as arranger, NATIXIS Zweigniederlassung Deutschland, as facility agent and original lender, AKA Ausfuhrkredit-Gesellschaft mbH, as original lender, and NATIXIS Labuan Branch as security agent	8-K	001-33156	5/12/08	10.1	
4.5		First Demand Guaranty dated May 6, 2008 by First Solar Inc, as guarantor, in favor of IKB Deutsche Industriebank AG, NATIXIS Zweigniederlassung Deutschland, AKA Ausfuhrkredit-Gesellschaft mbH and NATIXIS Labuan Branch	8-K	001-33156	5/12/08	10.2	
4.6		Credit Agreement, dated as of September 4, 2009, among First Solar, Inc., First Solar Manufacturing GmbH, the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Bank of America and The Royal Bank of Scotland plc, as Documentation Agents, and Credit Suisse, Cayman Islands Branch, as Syndication Agent	8-K	001-33156	9/10/09	10.1	
4.7		Charge of Company Shares, dated as of September 4, 2009, between First Solar, Inc., as Chargor, and JPMorgan Chase Bank, N.A., as Security Agent, relating to 66% of the shares of First Solar FE Holdings Pte. Ltd. (Singapore)	8-K	001-33156	9/10/09	10.2	
4.8		German Share Pledge Agreements, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar Manufacturing GmbH, First Solar GmbH, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.3	
4.9		Guarantee and Collateral Agreement, dated as of September 4, 2009, by First Solar, Inc. in favor of JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.4	
4.10		Guarantee, dated as of September 8, 2009, between First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as German Guarantors, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.5	

4.11	Assignment Agreement, dated as of September 4, 2009, between First Solar Holdings GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.6
4.12	Assignment Agreement, dated as of September 4, 2009, between First Solar GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.7
4.13	Assignment Agreement, dated as of September 8, 2009, between First Solar Manufacturing GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.8
4.14	Security Trust Agreement, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as Security Grantors, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other Secured Parties party thereto	8-K	001-33156	9/10/09	10.9
4.15	Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, Bank of America N.A. and The Royal Bank of Scotland PLC, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	10/20/10	10.1
4.16	Facility Agreement dated as of August 3, 2011 among First Solar Malaysia Sdn. Bhd., Commerzbank Aktiengesellschaft, as arranger and original lender, Commerzbank Aktiengesellschaft, Luxembourg Branch, as facility agent and security agent, and Natixis Zweigniederlassung Deutschland, as arranger and original lender	10-Q	001-33156	8/5/11	10.1

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4.17	First Demand Guaranty, dated as of August 3, 2011, among First Solar, Inc., First Solar Malaysia Sdn. Bhd. and Commerzbank Aktiengesellschaft, Luxembourg Branch, as facility agent and security agent	10-Q	001-33156	8/5/11	10.2
4.18	First Amendment, dated as of May 6, 2011, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	5/12/11	10.1
4.19	Credit Facility Agreement, dated as of May 18, 2011, among First Solar Manufacturing GmbH, Commerzbank Aktiengesellschaft, Luxembourg Branch, as security agent, and the additional finance parties party thereto	8-K	001-33156	5/24/11	10.1
4.20	Guarantee Agreement, dates as of May 18, 2011, among First Solar, Inc., First Solar Manufacturing GmbH and Commerzbank Aktiengesellschaft, Luxembourg Branch	8-K	001-33156	5/24/11	10.2
4.21	Facility Agreement, dated June 30, 2011, among First Solar Malaysia Sdn. Bhd., as borrower, First Solar, Inc., as guarantor, CIMB Investment Bank Berhad, Maybank Investment Bank Berhad and RHB Investment Bank Berhad, as arrangers, CIMB Investment Bank Berhad as facility agent and security agent, and the original lenders party thereto	8-K	001-33156	7/7/11	10.1
4.22	Second Amendment and Waiver, dated as of June 30, 2011, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/14/11	10.1
4.23	Amendment Letter, dated as of November 8, 2011, to the Facility Agreement, dated June 30, 2011, among First Solar Malaysia Sdn. Bhd., as borrower, First Solar, Inc., as guarantor, CIMB Investment Bank Berhad, Maybank Investment Bank Berhad and RHB Investment Bank Berhad, as arrangers, CIMB Investment Bank Berhad as facility agent and security agent, and the original lenders party thereto	10-K	001-33156	2/29/12	10.1
4.24	Third Amendment, dated as of October 23, 2012 to the Amended and Restated Credit Agreement dated as of October 15, 2010, among First Solar, Inc., the	8-K	001-33156	10/26/12	10.1

		lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent				
4.25		Amendment dated as of November 7, 2012 to the Export Financing Facility Agreement dated May 6, 2008 (as amended, the "Malaysian Facility Agreement") among FS Malaysia, the lenders party thereto, and Natixis Zweigniederlassung Deutschland, as Facility Agent.	10-K	001-33156	2/27/13	4.25
4.26		Fourth Amendment dated as of July 15, 2013, to the Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent.	8-K	001-33156	7/15/13	10.1
4.27		Amended and Restated Guarantee and Collateral Agreement, dated as of July 15, 2013, by First Solar, Inc., First Solar Electric, LLC, First Solar Electric (California), Inc. and First Solar Development, LLC in favor of JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	7/15/13	10.2
4.28		Second Amendment to the Malaysian Euro Facility Agreement	10-Q	001-33156	8/7/13	4.1
4.29		Fifth Amendment, dated as of June 3, 2015, to the Amended and Restated Credit Agreement, dated as of October 1, 2010, among First Solar, Inc., the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	8/6/15	10.1
10.1	†	Amendment to the Framework Agreement dated April 10, 2006 on the Sale and Purchase of Solar Modules between First Solar GmbH and Blitzstrom GmbH	10-K	001-33156	3/16/07	10.02
10.2		Amended and Restated 2006 Omnibus Incentive Compensation Plan	10-Q	001-33156	5/1/09	10.2
10.3		Form of Change in Control Severance Agreement	S-1/A	333-135574	10/25/06	10.15

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10.4	Form of Director and Officer Indemnification Agreement	10-K	001-33156	2/27/13	10.20	
10.5	First Solar, Inc. 2010 Omnibus Incentive Compensation Plan	DEF 14A	001-33156	4/20/10	App. A	
10.6	First Solar, Inc. Stock Purchase Plan	DEF 14A	001-33156	4/20/10	App. B	
10.7	Employment Agreement, dated March 15, 2011, and Change in Control Severance Agreement, dated April 4, 2011 between First Solar, Inc. and Mark Widmar	10-Q	001-33156	5/5/11	10.3	
10.8	Employment Agreement, dated March 14, 2012, and Change in Control Severance Agreement, dated March 19, 2012 between First Solar, Inc. and James Hughes	10-Q	001-33156	5/4/12	10.1	
10.9	Form of Key Senior Talent Equity Performance Program Grant Notice	10-Q	001-33156	5/4/12	10.2	
10.10	Amendment to Employment Agreement, effective as of May 3, 2012, between First Solar, Inc. and James Hughes, and Amendment to Non-Competition and Non-Solicitation Agreement, effective as of May 3, 2012, between First Solar, Inc. and James Hughes.	8-K	001-33156	5/11/12	10.1	
10.11	Employment Agreement, effective July 1, 2012, and Change in Control Severance Agreement, effective July 1, 2012 between First Solar, Inc. and Georges Antoun	10-Q	001-33156	8/3/12	10.1	
10.12	Non-Competition and Non-Solicitation Agreement, effective as of March 15, 2011, between First Solar, Inc. and Mark Widmar	10-Q	001-33156	5/7/13	10.2	
10.13	Change in Control Severance Agreement, effective as of July 1, 2012, between First Solar, Inc. and Georges Antoun	10-Q	001-33156	5/7/13	10.3	
10.14	Amendment to Change in Control Severance Agreement	10-Q	001-33156	8/7/13	10.1	
10.15	Employment Agreement, effective September 9, 2013, and Change in Control Severance Agreement, effective September 9, 2013 between First Solar, Inc. and Joseph Kishkill	10-K	001-33156	2/25/15	10.25	
10.16	Employment Agreement, effective March 3, 2014, and Change in Control Severance Agreement, effective March 3, 2014 between First Solar, Inc. and Paul Kaleta	10-K	001-33156	2/26/14	10.1	
10.17	Amended and Restated Corporate Governance Guidelines dated February 18, 2016	—	—	—	—	X
10.18	Restricted Cash Assignment of Deposits	10-Q	001-33156	8/6/14	10.2	
10.19	Master Formation Agreement by and between First Solar, Inc. and SunPower Corporation as of March 10, 2015	8-K	001-33156	3/11/15	2.1	
10.20			001-33156	4/8/15	App. A	

		First Solar, Inc. 2015 Omnibus Incentive Compensation Plan	DEF 14A				
10.21		Amended and Restated Limited Liability Company Agreement of 8Point3 Operating Company, LLC as of June 24, 2015	10-Q	001-33156	8/5/15	10.1	
10.22	†	Amended and Restated Limited Liability Company Agreement of 8Point3 Holding Company, LLC as of June 24, 2015	10-Q	001-33156	8/5/15	10.2	
10.23		Employment Agreement, effective as of July 25, 2011, and Change in Control Severance Agreement, effective as of October 25, 2011 and amended as of August 1, 2013, between First Solar, Inc. and Philip Tymen deJong	—	—	—	—	X
10.24		Employment Agreement, effective as of May 1, 2012, and Change in Control Severance Agreement, effective as of May 1, 2012 and amended as of August 1, 2013, between First Solar, Inc. and Raffi Garabedian	—	—	—	—	X
10.25		Employment Agreement, effective as of December 31, 2012 and amended as of April 8, 2013, and Change in Control Severance Agreement, effective as of December 31, 2012 and amended as of August 1, 2013, between First Solar, Inc. and Timothy Rebhorn	—	—	—	—	X
10.26		Employment Agreement, effective as of February 17, 2016, and Change in Control Severance Agreement, effective as of February 17, 2016 between First Solar, Inc. and Chris Bueter	—	—	—	—	X
14.1		Code of Ethics	10-Q	001-33156	8/5/15	14.1	
21.1		List of Subsidiaries of First Solar, Inc.	—	—	—	—	X
23.1		Consent of Independent Registered Public Accounting Firm	—	—	—	—	X
31.01		Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—	X
31.02		Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—	X

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32.01	*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes Oxley Act of 2002	—	—	—	—	X
101.INS		XBRL Instance Document	—	—	—	—	X
101.SCH		XBRL Taxonomy Extension Schema Document	—	—	—	—	X
101.DEF		XBRL Definition Linkbase Document	—	—	—	—	X
101.CAL		XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	—	X
101.LAB		XBRL Taxonomy Label Linkbase Document	—	—	—	—	X
101.PRE		XBLR Taxonomy Extension Presentation Document	—	—	—	—	X

† Confidential treatment has been requested and granted for portions of this exhibit.

* This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any filings.