FIRST SOLAR, INC.
Form 10-K
February 22, 2010

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

Form 10-K

(Mark One)

þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 26, 2009

or

o 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 þ No o

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

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 þ No o

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 during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes R No £

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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. (Check one):

Large accelerated filer þ	Accelerated filer o	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

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 27, 2009, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $7,360,781,207 (based on the closing sales price of the registrant's common stock on that date). Shares of the registrant's common stock held by each officer and director and each person who owns 5% or more of the outstanding common stock of the registrant are not included in that amount, because such persons may be deemed to be affiliates of the registrant. This determination of affiliate status is not necessarily a conclusive determination for other purposes. As of February 12, 2010, 85,229,228 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 2010, 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.

FIRST SOLAR, INC. AND SUBSIDIARIES

FORM 10-K FOR THE FISCAL YEAR ENDED DECEMBER 26, 2009

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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 fiscal years end on the last Saturday in December. Our last three fiscal yea ended on December 26, 2009, December 27, 2008 and December 29, 2007.

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 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 profit, operating expenses, products, projected costs and capital expenditures; research and development programs; 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,” “believe,” “forecast,” “foresee,” “likely,” “may,” “sho “might,” “will,” “could,” “predict” and “continue,” the negative or plural of these words and other comparable terminology. C 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. These factors include the matters discussed in the section entitled “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.

PART I

Item 1: Business

Overview

We manufacture and sell solar modules with an advanced thin film semiconductor technology, and we design, construct and sell photovoltaic (PV) solar power systems.

In addressing a growing global demand for PV solar electricity, we target markets with varying approaches depending on the underlying economics, market requirements and distribution channels. In subsidized feed-in tariff (FiT) markets, such as Germany, we have historically sold most of our solar modules to solar project developers, system integrators and independent power producers. In other markets, such as the United States, the demand for solar has been primarily driven by renewable portfolio standards requiring regulated utilities to supply a portion of their total electricity from renewable energy sources such as solar power. To meet the needs of these markets and enable balance of system cost reductions, we have developed a fully integrated systems business that can provide low-cost turn-key utility-scale PV system solutions for system owners and low cost electricity to utility end-users. By building a fully integrated systems business, we believe we are in a position to expand our business in transitional, and eventually economically sustainable markets (in which subsidies or incentives are minimal), which are expected to develop in areas with abundant solar resources and sizable electricity demand, such as the United States, China, India and parts of Europe. In the long-term, we plan on competing on an economic basis with conventional fossil fuel based peaking power generation.

In furtherance of our goal of delivering the lowest cost of solar energy and achieving price parity with conventional fossil-fuel based peak electricity generation, we are continually focused on reducing PV system costs in three primary areas: module manufacturing, Balance of System (BoS) costs (consisting of costs of components of a solar power

system other than the solar modules, including inverters, mounting hardware, grid interconnection equipment, wiring and other devices, and installation labor costs), and cost of capital. First, with respect to our module manufacturing costs, our advanced technology has allowed us to reduce our average module manufacturing costs to the lowest in the world, based on publicly available information. In 2009, our total average manufacturing costs were $0.87 per watt, which we believe is significantly less than those of traditional crystalline silicon solar module manufacturers. By continuing to improve conversion efficiency and production line throughput, lower material cost and drive volume scale to further decrease overhead costs, we believe that we can further reduce our manufacturing costs per watt and maintain our cost advantage over traditional crystalline silicon solar module manufacturers. Second, by continuing to improve conversion efficiency, leverage volume procurement around standardized hardware platforms, and accelerate installation time, we believe we can continue to make substantial reductions in BoS costs, which represent over half of all costs associated with a typical utility-scale PV solar power system. Finally, we believe that continuing to strengthen our financial position, including our balance sheet and credit profile, will enable us to continue to lower the cost of capital associated with our solar power systems, thereby further enhancing the economic viability of our projects and lowering the cost of electricity generated by solar power systems that incorporate our modules and technology.

We are the world's largest PV solar module manufacturer and produced more than 1.1 gigawatts (GW) of solar modules in 2009, becoming the first PV company to attain this production volume in a single year. We manufacture our solar modules on high-throughput production lines and perform all manufacturing steps ourselves in an automated, proprietary, 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 a crystalline silicon solar module. Currently, we manufacture our solar modules at our Perrysburg, Ohio, Frankfurt/Oder, Germany and Kulim, Malaysia manufacturing facilities (with additional manufacturing facilities planned for construction in Kulim, Malaysia and France) and conduct our research and development activities primarily at our Perrysburg, Ohio manufacturing facility.

Our fully integrated solar power systems business includes (i) project development, (ii) engineering, procurement and construction (EPC) services, (iii) operating and maintenance (O&M) services, and (iv) project finance expertise, all as described in more detail below.

- Our project development group obtains land and land rights for the development of solar power plants incorporating our modules, negotiates long-term power purchase agreements (PPA) with potential purchasers of the electricity to be generated by those plants, manages the interconnection and transmission process, negotiates agreements to interconnect the plant to the electric grid and obtains the permits which are required prior to the construction of the plant, including applicable environmental and land use permits. Our project development portfolio and capabilities have grown significantly primarily as a result of our acquisition of the project development business of OptiSolar Inc. in April 2009, and our acquisition of certain assets from Edison Mission Group’s utility-scale solar project development pipeline in January 2010. We sell developed projects or projects under development to system operators who wish to own generating facilities, such as utilities, or to investors who are looking for long-term investment vehicles that are expected to generate consistent returns.

- We provide EPC services to projects developed by our project development business, projects developed by independent solar power project developers, and directly to system owners such as utilities. The procurement component of our EPC services includes deployment of our modules as well as balance of system components that we procure from third parties.

- For solar power plants which we have developed and built, we may provide ongoing O&M services to the system owner under long-term service agreements. These O&M services may include overseeing the day-to-day operation of the system, safety and security, maximizing energy production, and management of reliability, site services, power purchase agreement and other contractual compliance, environmental and permit compliance, regulatory requirements, recordkeeping, forecasting, warranty, preventative and scheduled maintenance, and spare parts inventory and may also include certain additional guarantees relating to the project.

- Our project finance group is primarily responsible for negotiating and executing the sale of utility-scale power plant systems incorporating our modules which allows us to optimize the value of our project development portfolio. This group is experienced in structuring non-recourse project debt financing in the bank loan market and institutional debt capital markets and raising project equity capital from tax oriented and strategic industry equity investors.

We believe that combining our reliable, low cost module manufacturing capability with our systems business enables us to more rapidly reduce the price of solar electricity, to accelerate the adoption of our technology in large scale systems and to further our mission to create enduring value by enabling a world powered by clean, affordable solar electricity.

Segment Information

We operate our business in two segments. Our components segment designs, manufactures and sells solar modules to solar project developers and system integrators. Through our systems segment, we have the capability to provide a complete PV solar power system for utility-scale or large commercial systems, which includes project development, EPC, O&M services and, when required, project finance. We view the sale of solar modules from the components segment as the core driver of our profitability, return on net assets and cash throughput, and we view our systems segment as an enabler to drive module throughput.

As of December 26, 2009, our systems segment had not met the quantitative criteria for disclosure as a separate reporting segment. See also Note 22. “Segment and Geographic Information” to our consolidated financial statements included in this Annual Report on Form 10-K.

Components Business

Our components segment, which is our principal business, involves the design, manufacture and sale of solar modules which convert sunlight to electricity.

Solar Modules

Each solar module is approximately 2ft × 4ft (60cm × 120cm) and had an average rated power of approximately 75 watts, 73 watts, and 70 watts for 2009, 2008 and 2007, respectively. Our solar module is a single-junction polycrystalline thin film structure that uses cadmium telluride as the absorption layer and cadmium sulfide as the window layer. Cadmium telluride has absorption properties that are highly matched to the solar spectrum and has the potential to deliver competitive conversion efficiencies using only about 1% of the semiconductor material used by traditional crystalline silicon solar modules. Our thin film technology also has relatively high energy performance in low light and high temperature environments compared with traditional crystalline silicon solar modules.

Manufacturing Process

We have integrated our manufacturing processes into a continuous, integrated production line with the following three stages: the “deposition” stage, the “cell definition” stage, and the “assembly and test” stage. In the deposition stage, panels of treated glass are robotically loaded onto the production line where they are cleaned, heated and coated with a layer of cadmium sulfide followed by a layer of cadmium telluride using our proprietary vapor transport deposition technology, after which the semiconductor-coated plates are cooled rapidly to increase strength. In our cell definition stage, we use high speed lasers to transform the large single semiconductor-coated plate into a series of interconnected cells that deliver the desired current and voltage output. Our proprietary laser scribing technology is capable of accomplishing accurate and complex scribes at high speeds. Finally, in the assembly and test stage, we apply busbars, laminate, a rear glass cover sheet and termination wires, seal the joint box and subject each solar module to a solar simulator and current leakage test. The final assembly stage is the only stage in our production line that requires manual processing.

Our manufacturing facilities in Perrysburg, Ohio, Frankfurt/Oder, Germany and Kulim, Malaysia have each received both an ISO 9001:2000 quality system certification and ISO 14001:2004 environmental system certification. We anticipate that our additional manufacturing facilities, planned for construction in France and Kulim, Malaysia, will also obtain these certifications in 2011. During 2009, our Perrysburg facility also received the Occupational Health and Safety Standards (OHSAS) 18001 certification, an international occupational health and safety management system specification.

Research, Development and Engineering

We continue to devote a substantial amount of resources to research and development with the primary objective of lowering the per watt cost of electricity generated by photovoltaic systems using our solar modules. Within our components business, we focus our research and development activities on, among other areas, continuing to increase the conversion efficiency of our solar modules and improving manufacturing efficiencies (including volume ramp, throughput improvement and material cost reduction). We believe the most promising ways of increasing the conversion efficiency of our solar modules include maximizing the number of photons that reach the absorption layer of the semiconductor material to facilitate conversion into electrons, thereby maximizing the number of electrons that reach the surface of the semiconductor and minimizing the electrical losses between the semiconductor layer and the back metal conductor.

In the course of our research and development activities, we continuously explore and research new technologies in our efforts to sustain competitive differentiation in our modules. We typically qualify process and product improvements for full production at our Ohio plant and then use our “Copy Smart” process to propagate them to our

other production lines. We believe that this systematic approach to research and development will provide continuous improvements and ensure uniform adoption across our production lines. In addition, our production lines are replicas of each other using our “Copy Smart” process, and as a result, a process or production improvement on one line can be rapidly deployed to other production lines.

Customers

With respect to our components business, during 2009, we sold most of our solar modules to solar project developers and system integrators headquartered in Germany, France, Spain and Italy. Our customers typically develop, construct, own and operate solar power plants or sell turnkey solar power plants to end-users that include owners of land, owners of agricultural buildings, owners of commercial warehouses, offices and industrial buildings, public agencies, municipal government authorities, utility companies and financial investors that desire to own large scale solar power plant projects.

As of December 26, 2009, we had long-term supply contracts for the sale of solar modules with fourteen principal customers (Long-Term Supply Contracts) headquartered throughout the European Union. We also have a five-year agreement with a solar power system project developer and system integrator in the United States, which is a related party. Together, these contracts account for a significant portion of our planned module production over the period from 2010 through 2013 and therefore will significantly affect our overall financial performance. We have in the past amended pricing and other terms in our Long-Term Supply Contracts in order to remain competitive, as described below, and we may decide in the future to further amend such contracts in order to address the highly competitive environment. In addition, we enter into module sale agreements or standard purchase orders with customers for specific projects.

During the first quarter of 2009, we amended our Long-Term Supply Contracts with certain customers to further reduce the sales price per watt under these contracts in 2009 and 2010 in exchange for increases in the volume of solar modules to be delivered under the contracts. We also extended the payment terms for certain customers under these contracts from net 10 days to net 45 days to increase liquidity in our sales channel and to reflect longer module shipment times from our manufacturing plants in Malaysia. During the third quarter of 2009, we amended our Long-Term Supply Contracts with certain of our customers to implement a program which extends a price rebate to certain of these customers for solar modules purchased from us and installed in Germany. The intent of this program is to enable our customers to successfully compete in our core segments in Germany. The rebate program applies a specified rebate rate to solar modules sold for solar power projects in Germany at the beginning of each quarter for the upcoming quarter. The rebate program is subject to periodic review and we adjust the rebate rate quarterly upward or downward as appropriate. The rebate period commenced during the third quarter of 2009 and terminates at the end of the fourth quarter of 2010. Customers need to meet certain requirements in order to be eligible for and benefit from this program.

During 2009, principal customers of our components business were Blitzstrom GmbH, EDF EN Development, Gehrlicher Solar AG, Juwi Solar GmbH, and Phoenix Solar AG. During 2009, each of these five customers individually accounted for between 10% and 19% of our component segment's net sales. All of our other customers individually accounted for less than 10% of our net sales during 2009. The loss of any of our major customers could have an adverse effect on our business. As we expand our manufacturing capacity, we are seeking to develop additional customer relationships in other markets and regions, which would reduce our customer and geographic concentration and dependence.

While our Long-Term Supply Contracts have certain firm purchase commitments, these contracts are subject to amendments made by us or requested by our customers, such as the above mentioned amendments entered into during 2009. These amendments decreased the expected revenue under our Long-Term Supply Contracts during 2009. In addition, our Long-Term Supply Contracts are substantially denominated in euros and therefore are subject to exchange rate fluctuations between the euro and U.S. dollar. The strengthening of the euro compared to the U.S. dollar during 2009 partially offset the decrease in the expected revenue under our Long-Term Contracts resulting from the 2009 amendments.

As of December 26, 2009, the Long-Term Supply Contracts in the aggregate allowed for approximately $3.8 billion (3.3 billion denominated in euro at an assumed exchange rate of $1.15/€1.00 and 0.2 billion denominated in USD) in sales from 2010 to 2013. As of December 27, 2008, the Long-Term Supply Contracts in the aggregate allowed for approximately $5.8 billion (4.9 billion denominated in euro at an assumed exchange rate of $1.15/€1.00 and 0.2 billion denominated in USD) in sales from 2009 to 2013. The above-referenced dollar amounts relating to the Long-Term Supply Contracts declined from 2008 to 2009, primarily due to revenue recognized for contracted volumes sold in 2009, module pricing adjustments, the impact of the rebate program implemented in 2009 as described above, and pre-set price reductions under the terms of the Long-Term Supply Contracts.

We anticipate that approximately 55% of the aggregate contracted revenue under the Long-Term Supply Contracts as of December 26, 2009, will not be fulfilled in 2010 because they are associated with deliveries to be made in 2011 and

later periods. We believe that the aggregate dollar amount associated with the Long-Term Supply Contracts at any particular date is not necessarily a meaningful indicator of future revenue for any particular period because the fulfillment of such amount is subject to a variety of factors, including the factors described above.

Competition

The renewable energy, solar energy and solar module sectors are highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete within the larger electric power industry. We expect to face continued competition, which may result in price reductions, reduced margins or loss of market share. With respect to our components business, we believe that our main sources of competition are crystalline silicon solar module manufacturers, silicon and non-silicon based thin film module manufacturers and companies developing solar thermal and concentrated photovoltaic technologies. Among photovoltaic module and cell manufacturers, the principal methods of competition are price per watt, production capacity, conversion efficiency, reliability, warranty terms and finance ability. At December 26, 2009, the global photovoltaic industry consisted of more than 150 manufacturers of solar cells and modules.

In addition, we expect to compete with future entrants to the photovoltaic industry that offer new technological solutions. We may also face competition from semiconductor manufacturers and semiconductor equipment manufacturers or their customers, several of which have already announced their intention to start production of photovoltaic cells, solar modules or turnkey production lines. Some of these competitors may be part of larger corporations and have greater financial resources and greater brand name recognition than we do and may, as a result, be better positioned to adapt to changes in the industry or the economy as a whole.

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 burn conventional fossil fuels.

Raw Materials

Our manufacturing process uses approximately 20 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 eight are also critical to our manufacturing process: front glass coated with thermal conductive oxide, cadmium sulfide, photo resist, laminate, tempered back glass, cord plate/cord plate cap, lead wire and solar connectors. Before we use these materials and components in our manufacturing process, a supplier must undergo a qualification process that can last up to 12 months, depending on the type of raw material or component. Although we continually evaluate new suppliers and currently are qualifying several new suppliers, a few of our critical materials or components are sole sourced and most others are supplied by a limited number of suppliers.

Collection and Recycling Program

Consistent with the environmental philosophy of extended producer responsibility, we have established the solar industry's first comprehensive, prefunded module collection and recycling program. The program is designed to maximize the recovery of valuable materials for use in new modules or other new products and minimize the environmental impacts associated with our modules at the end of their useful life. Approximately 90% of each collected First Solar module is recycled into new products, including new modules. End-users can request collection and recycling of their solar modules by us at any time at no cost. We pre-fund the estimated collection and recycling cost at the time of sale, assuming for this purpose a minimum service life of approximately 25 years for our solar modules. In addition to achieving substantial environmental benefits, our solar module collection and recycling program may provide us the opportunity to resell or redistribute working modules or recover certain raw materials and components for reuse in our manufacturing process. We currently have recycling facilities operating at each manufacturing facility (for manufacturing scrap, warranty returns and modules collected at the end of their useful life) that produce glass suitable for use in the production of new glass products and extract metals that will be further processed by a third party supplier to produce semiconductor materials for reuse in our solar modules.

To ensure that the pre-funded amounts are available regardless of our financial status in the future, a trust structure has been established; funds are put into custodial accounts in the name of a trustee. Only the trustee can distribute funds from the custodial accounts and these funds cannot be accessed for any purpose other than for administering module collection and recycling, either by us or a third party executing the collection and recycling services. To provide further assurance that sufficient funds will be available, our module collection and recycling program, including the financing arrangement, is audited periodically by an independent third-party auditor.

Solar Module Warranty

We provide a limited warranty against defects in materials and workmanship under normal use and service conditions for five years following delivery to the owners of our solar modules. We also warrant to the owners of our solar modules that solar modules installed in accordance with agreed-upon specifications will produce at least 90% of their power output rating during the first 10 years following their installation and at least 80% of their power output rating

during the following 15 years. In resolving claims under both the defects and power output warranties, we have the option of either repairing or replacing the covered solar module or, under the power output warranty, providing additional solar modules to remedy the power shortfall. Our warranties are automatically transferred from the original purchasers of our solar modules to subsequent purchasers. As of December 26, 2009, our accrued warranty liability was $22.6 million, of which $8.2 million was classified as current and $14.4 million was classified as noncurrent.

Systems Business

Through our fully integrated systems business, we provide a complete PV solar power system solution, which includes project development, EPC services, O&M services and, when required, project finance.

Our systems business has grown over the past several years through a combination of business acquisitions and organic growth. On November 30, 2007, we completed the acquisition of Turner Renewable Energy, LLC, a privately held company which provided EPC services for commercial solar power projects in the United States. On April 3, 2009, we completed the acquisition of the project development business of OptiSolar Inc., which included a multi-gigawatt project pipeline. In January 2010, we completed the acquisition of certain assets from Edison Mission Group's solar project development pipeline consisting of utility-scale solar projects located primarily on private land in California and the Southwest.

Project Development

Our systems business is dependent upon successful completion of project development activities including: site selection and acquisition, obtaining in a timely manner the requisite interconnection and transmission studies, environmental and land use permits, maintaining effective site control, and entering into a power purchase agreement 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 solar power system. Power purchase agreements define the price and terms the utility customer will pay for power produced from a project. Entering into a power purchase agreement generally provides the underlying economics needed to advance the construction, finance and eventual sale of the project to the long-term site owner and power producer subject to obtaining all necessary permits. Depending primarily on the location and other site attributes, the development cycle can range from one to five years or longer in some circumstances. We may be required to spend significant sums 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 and/or the right of the off-taker under the power purchase agreement to terminate may be triggered.

Our project development activities are currently focused on markets in North America, Europe and Asia.

In North America, we have entered into approximately 1.25GW of power purchase agreements with utilities in the southwestern U.S. and have a pipeline of approximately 150 megawatts (MW) of projects in Canada governed under Ontario’s Renewable Energy Standard Offer Program (RESOP), for a total pipeline of 1.4GW of projects in North America that we expect to develop between 2010 and 2014.

In Europe, we are engaged in project development activities with respect to certain projects in France and Italy that we acquired as part of the OptiSolar pipeline, and we are actively evaluating additional project opportunities in Europe.

In Asia, our project development activities include our initiatives in China. In September 2009, we entered into a Memorandum of Understanding with the Ordos, China City Government outlining a long-term strategic relationship between the parties pursuant to which we would, through an appropriate business model, develop and construct a 2000MW photovoltaic power plant located within the Ordos New Energy Industry Demonstration Zone in China. In November 2009, we entered into a Cooperation Framework Agreement with the Ordos government outlining additional project details, timing and local support for the 2000MW power plant. The Memorandum of Understanding and the Corporation Framework Agreements set forth the agreement in principle of the parties concerning the project and related activities, and final agreement between the parties is subject to the negotiation and execution of definitive agreements among the parties.

In the fourth quarter of 2009, we sold our 20MW solar project in Sarnia, Ontario, Canada to Enbridge Inc. The power output of the Sarnia facility will be sold to the Ontario Power Authority pursuant to a 20-year power purchase

agreement under the terms of the Ontario RESOP program. Later in the fourth quarter of 2009, we entered into an agreement with Enbridge Inc. to expand the Sarnia facility from 20MW to 80MW. When completed later in 2010, the Sarnia facility is expected to be the largest PV solar facility in North America. In the fourth quarter of 2009, we also sold our 21MW solar project in Blythe, California to NRG Energy, Inc. Electricity generated by the Blythe facility, which is currently California's largest PV solar generation facility, is being sold to Southern California Edison under a 20-year power purchase agreement.

Customers

With respect to our systems business, our customers consist of investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners who purchase completed solar power plants, EPC services and/or operation and maintenance services from us.

Competition

With respect to our systems business, we face competition from other providers of renewable energy solutions, including developers of photovoltaic, solar thermal and concentrated 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 ventures between EPC companies and solar companies.

Sales and Marketing

Historically, the majority of our module sales have been for grid-connected ground or commercial roof mounted solar power systems in Germany and other European Union countries with feed-in tariff subsidies. These feed-in tariff subsidies have been critical for the development of the solar industry because they provided the demand visibility required for module manufacturers and other participants in the solar value chain to reduce costs and drive scale. In 2007, we began to identify and target certain key transition markets, such as the United States, that had the potential to bridge the gap from the existing feed-in tariff markets to sustainable markets. Within these transition markets, our strategy is to advocate for market structures and policies that drive demand for solar power systems and to identify and break constraints to the successful migration to sustainable solar markets. In furtherance of this objective, we have developed a fully integrated systems business to increase module throughput, drive cost reduction across the value chain, identify and break constraints to sustainable markets and to deliver the most compelling solutions to our customers and end- users.

Economic Incentives

Government subsidies, economic incentives and other support for solar electricity generation generally include feed-in tariffs, net metering programs, renewable portfolio standards, tax incentives, loan guarantees, grants, rebates, low interest loans and grid access initiatives.

Under a feed-in tariff subsidy, the government sets prices that regulated utilities are required to pay for renewable electricity generated by end-users. The prices are set above market rates and may differ based on system size or application. Net metering programs enable end-users to sell excess solar electricity to their local utility in exchange for a credit against their utility bills. The policies governing net metering vary by state and utility. Some utilities pay the end-user upfront, while others credit the end-user’s bill.

Under a renewable portfolio standard (RPS), the government requires regulated utilities to supply a portion of their total electricity in the form of renewable electricity. Some programs further specify that a portion of the renewable energy quota must be from solar electricity, while others provide no specific technology requirement for renewable electricity generation. RPS-type mechanisms have been adopted in a majority of U.S. states. Regulations vary from state to state, and currently there is no federal RPS mandate. The state of California’s RPS goal of 33% of electricity from renewable sources by 2020 is currently the most significant RPS program in the United States in magnitude, and it is contributing to the expansion of the utility-scale solar systems market in that state.

Tax incentive programs exist in the United States at both the federal and state level and can take the form of investment and production tax credits, accelerated depreciation and sales and property tax exemptions. 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 October 2008, the United States Congress extended the 30% federal investment tax credit (ITC) for both residential and commercial solar installations for eight years, through December 31, 2016. The ITC is a primary economic driver of solar installations in the United States. Its extension through 2016 has contributed to greater medium term demand visibility in the U.S.; however, its expiration at the end of 2016 (unless extended) underscores the need for the levelized cost of electricity from solar systems to continue to decline toward grid parity. In February 2009, the American Recovery and Reinvestment Act of 2009 (ARRA) was signed into law. In addition to adopting certain fiscal stimulus measures that could benefit on-grid solar electricity applications, ARRA created a new program, through the Department of the Treasury, which provides cash grants equal to 30% of the cost of the system for solar installations that are placed into service during 2009 and 2010 and for certain solar installations for which construction begins prior to December 31, 2010. This cash grant is available in lieu of receiving the 30% federal investment tax credit. The intent of this program was to ensure that investors who had historically supported the renewable energy programs would not be constrained from investing in these transactions by tax losses they may have suffered during the recent credit crisis. Other measures adopted by ARRA that could benefit on-grid solar electricity generation include the following: (1) a Department of Energy loan guarantee program for renewable energy projects, renewable energy manufacturing facilities and electric power transmission projects and (2) a 50% bonus depreciation for solar installations placed in service during 2009. Various legislation has been proposed to extend and slightly modify the ITC incentives to continue to ensure short-term investor tax positions do not limit future investment in renewable energy projects. In addition, legislation is being proposed which could extend the bonus depreciation benefit for projects completed in 2010. However, enactment of the extension or enhancement of such incentives is highly uncertain.

Rebate programs for solar installations in California and several other states have increased the quantity of solar energy from distributed photovoltaic systems (typically smaller non-utility scale PV systems co-located with residential or commercial rooftop end-users) and have contributed to demand for PV solar modules and systems.

Regulations and policies relating to electricity pricing and interconnection also stimulate demand for distributed generation from photovoltaic systems. PV systems generate most of their electricity during mid-day and the early afternoon hours when the demand for and cost of electricity is highest. As a result, electricity generated by PV systems mainly competes with expensive peak hour electricity, rather than the lower average price of electricity. Modifications to the peak hour pricing policies of utilities, such as to a flat rate, would require PV systems to achieve lower prices in order to compete with the price of electricity.

In Europe, renewable energy targets in conjunction with feed-in tariffs have contributed to the growth in PV solar markets. Renewable energy targets prescribe how much energy consumption must come from renewable sources, while FiT policies are intended to support new supply development by providing investor certainty. A 2001 European Union (EU) directive for promoting renewable energy use in electricity generation (Directive 2001/77/EC) had set varying national indicative targets for renewable energy production from individual member states. A 2009 EU directive on renewable energy (Directive 2009/28/EC), which replaces the 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 pathways for the development of renewable energy sources. The following is a description of FiT policies adopted in certain critical EU markets in support of renewable energy targets.

Currently, Germany, which accounted for approximately 65% of our 2009 net sales, is the most significant market for our modules, and the recent proposed changes to German feed-in tariffs are likely to affect our results of operations. The German Renewable Energy Law, or the EEG, was last modified by the German government in 2008 with effect on January 1, 2009. At that time, feed-in tariffs were significantly reduced from earlier levels. Further, under the current legislation, Germany feed-in tariffs declined 9% for roof mounted applications and 11% for ground mounted

applications on January 1, 2010 and will decline on January 1, 2011 a further 8% to 10% (based on the volume of PV modules deployed in Germany during the 12 months ending on September 30, 2010 and the type of PV system). This compares to an annual decline of between 5% and 6.5% under the prior legislation. The next review of feed-in tariffs for all types of renewable energy was scheduled for 2012. However, following the 2009 election of a new center-right-liberal government in Germany, a further reduction in the PV feed-in tariff is currently under discussion and will most likely come into effect in the second or third quarter of 2010. Such a reduction in the feed-in tariff, including any potential further reductions, could result in a significant decline in demand and price levels for photovoltaic products in Germany, which could have a material adverse effect on our business, financial condition or results of operations.

In France, which accounted for approximately 12% of our 2009 net sales and where we have announced plans to build a two-line manufacturing plant, the government amended its feed-in tariff on January 12, 2010. The new decree became effective January 14, 2010 and does not have an expiry date but can be amended at any time. The new feed-in tariff provides a lower rate than the prior feed-in tariff for all applications while introducing, among other things, a departmental bonus which makes free field projects in the northern regions of France more attractive. In addition, the inflation index that increases the feed-in tariff received by a PV project after its first year of operation was also reduced. The current feed-in tariff will have a 10% annual digression starting on January 1, 2012.

In Italy, which accounted for approximately 6% of our 2009 net sales, the current legislation provides that the existing feed-in tariff will be in effect until the expiration of a 14 month transition period that will begin once 1.2GW of photovoltaic systems are installed under the existing feed-in tariff. Any photovoltaic system that is interconnected before the expiration of the transition period will also receive the feed-in tariff currently in effect. It is expected that the 1.2GW threshold will be reached in 2010. It is further expected that the Italian government will propose and enact a new reduced feed-in tariff before the end of 2010.

In Spain, which accounted for approximately 3% of our 2009 net sales, the government published the feed-in tariff currently in effect for PV systems in September 2008. This feed-in tariff introduced a mechanism that requires a PV system to be registered in a national registry in order to obtain the Spanish feed-in tariff. Critically, under the legislation, only a certain number of MWs of PV systems so registered are granted a feed-in tariff each quarter. Other PV systems applying for a feed-in tariff remain in a queue and will be awarded a feed-in tariff in accordance with their place in the queue. For 2010 and 2011, the legislation limits the number of MW of PV systems that are awarded a feed-in tariff to 560MW and 500MW, respectively. The current legislation is scheduled to be reviewed by January 1, 2012.

In Ontario, Canada, a new feed-in tariff program was introduced in September 2009 and replaced the Renewable Energy Standard Offer Program (RESOP) as the primary subsidy program for future renewable energy projects. In order to participate in the Ontario feed-in tariff program, certain provisions relating to minimum required domestic content and land use restrictions for solar installations must be satisfied. The new domestic content and land restriction rules do not apply to our Sarnia solar projects and the other projects governed by RESOP contracts that we acquired in connection with our acquisition of the solar power project development business of OptiSolar Inc. in April 2009. However, PV solar power systems incorporating our modules would not satisfy the domestic content requirement under the new feed-in tariff program currently in effect.

In Australia, which accounted for approximately 1% of our 2009 net sales, the solar industry is driven by several regulatory initiatives that support the installation of solar PV modules in both rooftop and free-field applications, including the nationwide Renewable Energy Target Scheme that has set a renewable energy goal for Australia of 20% by 2020. In July 2009, the Solar Homes and Communities Plan, which previously provided the primary incentive for rooftop installations, was replaced with the less lucrative Solar Credits Scheme.

In China, governmental authorities have not adopted a feed-in tariff policy and currently award solar projects through either a project tendering process or bi-lateral negotiations. We did not have sales in China in 2009; however, in September 2009, we entered into a Memorandum of Understanding with the Ordos, China City Government relating to the construction of a 2GW PV power plant located within the Ordos New Energy Industry Demonstration Zone in China. See “Item 1: Business — Segment Information —Systems Business — Project Development.”

In 2009, India announced its National Solar Mission, which includes a goal of installing 20GW of solar by 2022. India is expected to announce a feed-in tariff for the first phase of the National Solar Mission in 2010. We did not have any sales in India in 2009.

For more information about risks related to economic incentives, please see “Item 1A: Risk Factors — Reduced growth in or the reduction, elimination or expiration of government subsidies, economic incentives and other support for on-grid solar electricity applications, including the anticipated feed-in tariff reductions in Germany and certain other core markets, could reduce demand and/or price levels for our solar modules, limit our growth or lead to a reduction in our net sales, and adversely impact our operating results.”

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. As of December 26, 2009, we held 22 patents in the United States, which will expire at various times between 2012 and 2026, and had 96 patent applications pending. We also held 28 patents and had over 100 patent applications pending in foreign jurisdictions. 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. We continually assess appropriate occasions for seeking patent protection for those aspects of our technology, designs and methodologies and processes that we believe provide significant competitive advantages.

As of December 26, 2009, we used two trademarks, “First Solar” and “First Solar and Design,” in the United States and other countries.

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 photovoltaic 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. All of 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 claims.

Environmental Matters

Our manufacturing operations include the use, handling, storage, transportation, generation and disposal of hazardous materials. We are subject to various federal, state, local and international laws and regulations relating to the protection of the environment, including those governing the discharge of pollutants into the air and water, the use, management and disposal of hazardous materials and wastes, occupational health and safety, and the cleanup of contaminated sites. 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 laws or non-compliance with environmental permits required at our facilities. We believe we are currently in substantial compliance with applicable environmental requirements and do not expect to incur material capital expenditures for environmental controls in the foreseeable future. However, future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations or the discovery of unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations and/or financial condition. 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 February 12, 2010, we had approximately 4,700 associates (our term for full and part-time employees), including approximately 3,900 in manufacturing. The remainder of our associates are in research and development, sales and marketing and general and administrative positions, including associates who are engaged in or support our systems business. None of our associates are currently represented by labor unions or covered by a collective bargaining agreement. As we expand domestically and internationally, however, we may encounter associates who desire union representation or a collective bargaining agreement. We believe that our relations with our associates are good.

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, Frankfurt/Oder, Germany and Kulim, Malaysia

manufacturing facilities (with additional manufacturing facilities planned for construction in Kulim, Malaysia and France beginning in 2010). In 2009, 86% of our net sales were generated from customers headquartered in the European Union. We are in the process of expanding our operations, particularly with respect to our systems business, to numerous countries worldwide, including other European and Asian countries and Australia. As a result, we will be subject to the legal, tax, political, social and regulatory requirements and economic conditions of many jurisdictions. The international nature of our operations subject 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.” See also Note 22. “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 for the years ended December 26, 2009, December 27, 2008 and December 29, 2007. See also “Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations” for other information about our operations and activities in various geographic regions.

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 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 (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, NE, 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 an Internet website that contains reports and other information regarding issuers, such as First Solar, that file electronically with the SEC. The SEC's Internet website is located at http://www.sec.gov.

Executive Officers of the Registrant

Our executive officers and their ages and positions as of February 19, 2010, were as follows:

Name	Age	Position
Michael J. Ahearn	53	Executive Chairman
Robert J. Gillette	49	Chief Executive Officer
Bruce Sohn	48	President
Jens Meyerhoff	45	Chief Financial Officer
Mary Beth Gustafsson	50	Executive Vice President, General Counsel and Secretary
TK Kallenbach	50	Executive Vice President, Marketing and Product Management
David Eaglesham	48	Chief Technology Officer
Carol Campbell	58	Executive Vice President, Human Resources
James Zhu	48	Chief Accounting Officer

Michael J. Ahearn serves as Executive Chairman of First Solar and served as CEO from August 2000 to September 2009. Prior to First Solar, he was Partner and President of the equity investment firm, JWMA (formerly True North Partners, L.L.C.). Prior to joining JWMA, Mr. Ahearn practiced law as a partner in the firm of Gallagher & Kennedy. Mr. Ahearn has served on the boards of Arizona Technology Enterprises, Arizona State University Research Park, Homeward Bound, the Arizona Science Museum and currently serves on the board of the German Marshall Fund of the United States. Mr. Ahearn holds a B.A. in Finance and a J.D. from Arizona State University.

Robert J. Gillette joined First Solar in October 2009 as Chief Executive Officer. Prior to joining First Solar, Mr. Gillette served as President and Chief Executive Officer of Honeywell Aerospace since January 2005. Honeywell Aerospace, headquartered in Phoenix, Arizona, is Honeywell International's largest business group with current sales of more than $12 billion annually. In this role, Mr. Gillette led Honeywell Aerospace's three main businesses—Air Transport & Regional, Business & General Aviation, and Defense & Space—with more than 40,000 associates at nearly 100 worldwide manufacturing and service sites. Prior to this assignment, Mr. Gillette had served as President and Chief Executive Officer of Honeywell Transportation Systems since July 2001. Mr. Gillette holds a bachelor's of science degree in Finance from Indiana University.

Bruce Sohn has served as President of First Solar since March 2007. Mr. Sohn served as a director of First Solar from July 2003 until June 2009. Prior to joining First Solar as President, Mr. Sohn worked at Intel Corporation for 24 years. He is a senior member of IEEE and a certified Jonah. Mr. Sohn has been a guest lecturer at several universities, including the Massachusetts Institute of Technology and Stanford University. Mr. Sohn holds a degree in Materials Science and Engineering from the Massachusetts Institute of Technology.

Jens Meyerhoff joined First Solar in May 2006 as Chief Financial Officer. Prior to joining First Solar, Mr. Meyerhoff was the Chief Financial Officer of Virage Logic Corporation, a provider of embedded memory intellectual property for the design of integrated circuits, from January 2006 to May 2006. Mr. Meyerhoff was employed by FormFactor, Inc., a manufacturer of advanced wafer probe cards, as Chief Operating Officer from April 2004 to July 2005, Senior Vice President of Operations from January 2003 to April 2004 and Chief Financial Officer from August 2000 to March 2005. Mr. Meyerhoff holds a German Wirtschaftsinformatiker degree, which is the equivalent of a Finance and Information Technology degree, from Daimler Benz's Executive Training Program.

Mary Beth Gustafsson joined First Solar in October 2008 as Vice President, General Counsel. She was named Executive Vice President, General Counsel and Secretary in November 2009. Prior to joining First Solar, Ms. Gustafsson was the Senior Vice President, General Counsel and Secretary of Trane Inc. (formerly American Standard Companies Inc.) from January 2005 through June 2008. From June 2008 through September 2008, Ms. Gustafsson was Vice President and Deputy General Counsel of Ingersoll-Rand Ltd., following Ingersoll-Rand's acquisition of Trane. From 2001 through 2005, Ms. Gustafsson held positions of increasing responsibility at American Standard Companies Inc., including Chief Corporate Counsel and General Counsel for the company's global air conditioning business. Ms. Gustafsson holds a B.A. in English Literature from Boston University, and a J.D. from The University of Michigan Law School.

TK Kallenbach joined First Solar in December 2009 as Executive Vice President of Marketing and Product Management. Prior to joining First Solar, Mr. Kallenbach was a senior executive at Honeywell Aerospace where he led strategic planning, product marketing, product management, mergers and acquisitions and marketing communications. His organization created and drove Honeywell Aerospace strategy through product portfolio integration and product line management. Mr. Kallenbach began his career at Honeywell (formerly AlliedSignal) in 1979, where he held a variety of senior technical leadership positions, including Vice President of Engineering and Technology for Aerospace Electronics, Defense & Space Electronic Systems, and Propulsion Engines and Systems, and senior business leadership positions including Vice President of Business Aviation, Director of HTF7000 Propulsion System, and Director of Helicopter Engines. Mr. Kallenbach holds both a B.S. in Mechanical & Aerospace Engineering and a Masters of Business Administration from Arizona State University.

David Eaglesham joined First Solar in June 2006 as Vice President Technology and became Chief Technology Officer in November 2009. Prior to joining First Solar, he was Director of Advanced Technologies at Applied Materials. He also previously worked as Chief Technologist at Lawrence Livermore and as Director of Electronic Device Research at Bell Labs. He was Materials Research Society President in 2005. Mr. Eaglesham has a PhD in Physics from the University of Bristol.

Carol Campbell joined First Solar in March 2006 as Director of Human Resources and was named Vice President of Human Resources in March 2007. She became the Company's Executive Vice President of Human Resources in November 2009. Prior to joining First Solar, she was the Regional Director of Human Resources for North America at the Dana Corporation, where she was responsible for all Dana plants in the United States, Canada, and Mexico. Ms. Campbell was with Dana for 20 years, progressing through levels of greater responsibility in the Legal and Human Resource Departments. Ms. Campbell holds a Professional Human Resources certification through the Society of Human Resources Management and has extensive experience successfully developing and running highly effective HR organizations in complex and rapidly changing environments. Ms. Campbell holds a B.A. in Business from Heidelberg College.

James Zhu serves as First Solar's Chief Accounting Officer. Mr. Zhu joined the company as Vice President, Corporate Controller in June 2007. Prior to joining First Solar, Mr. Zhu served as Assistant Controller and then Vice President, Corporate Controller for Salesforce.com from May 2004 to May 2007. From July 1999 through April 2004, Mr. Zhu held positions of increasing responsibility at Chiron Corporation (acquired by Novartis International AG in April 2006), including Associate Director and Accounting Manager. Prior to joining Chiron Corporation, Mr. Zhu worked at KPMG, LLP. Mr. Zhu is a Certified Public Accountant and holds a B.A. in Economics from China and an M.B.A. in

Accounting from Golden Gate University.

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

If photovoltaic technology is not suitable for widespread adoption, or if sufficient demand for solar modules 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.

The solar energy market is at a relatively early stage of development and the extent to which solar modules will be widely adopted is uncertain. If photovoltaic technology proves unsuitable for widespread adoption or if demand for solar modules fails to develop sufficiently, we may be unable to grow our business or generate sufficient net sales to sustain profitability. In addition, demand for solar modules in our targeted markets — including Germany, Italy, Spain, France, the United States, Canada, China and Australia — may not develop or may develop to a lesser extent than we anticipate. Many factors may affect the viability of widespread adoption of photovoltaic technology and demand for solar modules, including the following:

- cost-effectiveness of the electricity generated by photovoltaic power systems compared to conventional energy sources and products, including conventional energy sources, such as natural gas, and other non-solar renewable energy sources, such as wind;

- availability and substance of government subsidies, incentives and renewable portfolio standards to support the development of the solar energy industry;

- performance and reliability of PV systems and thin film technology compared to conventional and other non-solar renewable energy sources and products;

- success of other renewable energy generation technologies, such as hydroelectric, tidal, wind, geothermal, solar thermal, concentrated photovoltaic, 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 price of oil, natural gas and other fossil fuels; and

- fluctuations in capital expenditures by end-users of solar modules, which tend to decrease when the economy slows and interest rates increase.

Reduced growth in or the reduction, elimination or expiration of government subsidies, economic incentives and other support for on-grid solar electricity applications, including the anticipated feed-in tariff reductions in Germany and certain other core markets, could reduce demand and/or price levels for our solar modules, and limit our growth or lead to a reduction in our net sales, and adversely impact our operating results.

We believe that the near-term growth of the market for on-grid applications, where solar energy is used to supplement the electricity a consumer purchases from the utility network, depends significantly on the availability and size of government subsidies and economic incentives. Federal, state and local governmental bodies in many countries, most notably Germany, Italy, Spain, France, the United States, Canada, China, India, Australia, Greece and Portugal have provided subsidies in the form of feed-in tariffs, rebates, tax incentives and other incentives to end-users, distributors, systems integrators and manufacturers of photovoltaic products. Many of these jurisdictions, including the majority of

U.S. states and numerous European Union countries, have adopted renewable portfolio standards in which the government requires jurisdictions or regulated utilities to supply a portion of their total electricity from specified sources of renewable energy, such as solar, wind and hydroelectric power. Many of these government incentives expire, phase out over time, require renewal by the applicable authority or may be amended. A summary of recent developments in the major government subsidy programs in our core markets follows. We expect the feed-in tariff in Germany and certain other core markets to be reduced earlier than previously expected, and such reductions could reduce demand and/or price levels for our solar modules, lead to a reduction in our net sales and adversely impact our operating results.

German feed-in tariffs will be adjusted earlier than previously expected, and any downwards adjustment could reduce demand for our solar modules, lead to a reduction in our net sales and adversely impact our operating results. Currently, Germany, which accounted for approximately 65% of our net sales in 2009, is the largest market for our modules, and thus recently proposed changes to German feed-in tariffs could significantly impact our results of operations. A reduction in the PV feed-in tariff is currently under discussion and will most likely come into effect in the second or third quarter of 2010. The amount of the FiT reductions are expected to vary among roof-mounted applications, non-agricultural land free field applications and agricultural land free field applications. A significant reduction in the FiT for agricultural land free field applications in particular would likely cause a significant decline in demand for PV solar systems on agricultural land in Germany and contribute to a migration toward roof mounted applications and non-agricultural land free field applications. Overall, reductions in the German feed-in tariffs, including any potential further reductions, could result in a significant decline in demand and price levels for photovoltaic products in Germany, which could have a material adverse effect on our business, financial condition or results of operations.

In France, a new decree effective January 2010 provides for lower feed-in tariffs for all applications (including, as in Germany, varying reductions for rooftop applications and free field applications) while introducing, among other things, a departmental bonus which makes free field projects in the northern regions of France more attractive. The new decree does not have an expiry date, but can be amended at any time.

In Italy, the current legislation provides that the existing feed-in tariff will be in effect until the expiration of a 14 month transition period that will begin once 1.2GW of photovoltaic systems are installed under the existing feed-in tariff. It is expected that the Italian government will propose and enact a new feed-in tariff before the end of 2010. Current proposals reflect significant FiT reductions, particularly for ground mounted applications. We cannot be certain of the level of such new feed-in tariff. If the level of such feed-in tariff is not adequate to promote the development of the PV industry or PV projects in Italy, our ability to pursue an expansion strategy in Italy would be adversely affected.

In Spain, the current legislation is scheduled to be reviewed by January 1, 2012; however, an earlier FiT adjustment is possible.

In the United States, California has been the state where the majority of solar installations and solar power module and system sales have taken place during the past five years. The state of California's RPS goal of 33% of electricity from renewable sources by 2020, currently in the form of an executive order from the Governor's office, is the most significant RPS program in the United States in magnitude and is contributing to the expansion of the utility-scale solar systems market in that state. However, the continued effectiveness of this RPS program could be negatively impacted if the RPS goal is not passed by the CA legislature and signed into law. See "Item 1A: Risk Factors — Our ability to pursue an expansion strategy in California beyond existing projects may be adversely affected if California is unable to achieve a 33% renewable mandate through law" below.

The American Recovery and Reinvestment Act of 2009 provides for certain measures intended to benefit on-grid solar electricity generation and other renewable energy initiatives, including (1) a cash grant in lieu of the 30% federal investment tax credit for solar installations that are placed into service during 2009 and 2010 or that begin construction prior to December 31, 2010 and are placed into service by January 1, 2017, and (2) a 50% bonus depreciation for installations placed in service during 2009. Various legislation has been proposed to extend or enhance the 30% grant in lieu of the tax credit as well as bonus depreciation. However, enactment of the extension or enhancement of such incentives is highly uncertain. The failure to extend or enhance these programs may reduce tax equity availability (in the case of the grant expiration) which may adversely affect our ability to arrange financing for utility-scale projects and may otherwise adversely affect the attractiveness of the U.S. solar market.

In Ontario, Canada, a new feed-in tariff program was introduced in September 2009 and replaced the Renewable Energy Standard Offer Program (RESOP) as the primary subsidy program for future renewable energy projects. In order to participate in the Ontario feed-in tariff program, certain provisions relating to minimum required domestic content and land use restrictions for solar installations must be satisfied. The new domestic content and land restriction rules do not apply to our Sarnia solar project and the other projects governed by RESOP contracts that we acquired in connection with our acquisition of the solar power project development business of OptiSolar Inc. in April 2009. However, our Ontario projects in earlier stages of development that are not governed by RESOP contracts, as well as any potential new projects in Ontario, will be subject to such domestic content and land restriction rules. As these rules are currently written, we will be unable to fully satisfy such rules (in particular the domestic content requirement rules), thus projects incorporating our modules will not qualify for the Ontario feed-in tariff. In the event the Ontario domestic content and land use restriction rules are not sufficiently modified, our ability to participate in the Ontario feed-in tariff program for future projects will be substantially reduced and possibly completely eliminated, and thus our ability to pursue an expansion strategy in Ontario, Canada beyond our existing RESOP projects would be adversely affected.

In China, governmental authorities have not adopted a feed-in tariff policy and currently award solar projects through either a project tendering process or bi-lateral negotiations. While the solar industry generally anticipates that China will adopt a solar feed-in tariff, there is no guarantee this will occur in a timely manner or at all or that any feed-in tariff will be economically viable. Without a feed-in tariff, the size and attractiveness of China's solar market may be limited and we may be unable to sell into China at an attractive price, limiting one of our anticipated growth markets.

In Australia, the large-scale solar industry is in its infancy, and despite several encouraging government funded initiatives to promote large-scale solar generation, it is uncertain whether such programs can be successfully executed.

In 2009, India announced its National Solar Mission, which includes a goal of installing 20GW of solar by 2022. India is expected to announce a feed-in tariff for the first phase of the National Solar Mission in 2010. There is no guarantee that India will maintain its current 20GW by 2022 goal or adopt the required policies to meet that goal, without which, the size and attractiveness of India's solar market may be limited and we may be unable to sell modules or systems in India at an attractive price, limiting one of our anticipated growth markets.

Emerging subsidy programs may require an extended period of time to attain effectiveness because the applicable permitting and grid connection processes associated with these programs can be lengthy and administratively burdensome.

In addition, if any of these statutes or regulations is found to be unconstitutional, or is reduced or discontinued for other reasons, sales prices and/or volumes of our solar modules in these countries could decline significantly, which could have a material adverse effect on our business, financial condition and results of operations.

Electric utility companies or generators of electricity from fossil fuels or other renewable energy sources could also lobby for a change in the relevant legislation in their markets to protect their revenue streams.

Reduced growth in or the reduction, elimination or expiration of government subsidies and economic incentives for on-grid solar energy applications, especially those in our target markets, could limit our growth or cause our net sales to decline and materially and adversely affect our business, financial condition and results of operations.

Our ability to pursue an expansion strategy in California beyond existing projects may be adversely affected if California is unable to achieve a 33% renewable mandate through law.

California currently requires its investor-owned utilities (IOUs) to procure 20% of their electricity supplies through eligible renewable energy resources by 2010. In addition, California, through Executive Order has established a utility procurement goal of 33% renewable electricity by 2020. Due to the threat of penalties under the current law, investor-owned utilities have the incentive to comply and have therefore signed long-term contracts to meet the 20% procurement requirement. However, since the 33% procurement of renewable electricity by 2020 goal is not enforceable through law, it is conceivable that renewable energy procurement in California could peak around 20% of the IOU's electricity retail sales in 2010. If the state legislature and Governor's office are unable to adopt legislation that could be signed into law by the end of 2010, the viability of the 33% RPS program would remain at risk. California's current financial difficulties could contribute to an environment in which the 33% RPS program could be questioned. In addition, any weakening or delay of the 33% RPS program could contribute to, or be accompanied by, increased project execution risks, delay, or costs relating to California authorities, such as the California Independent System Operator. Under such a scenario, our ability to execute a long-term expansion plan to develop additional large-scale PV projects in California could be adversely affected.

An increase in interest rates or lending 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 end-users to finance the cost of a PV system and could reduce the demand for our solar modules and/or lead to a reduction in the average selling price for photovoltaic modules.

Many of our customers and our systems business depend on debt financing to fund the initial capital expenditure required to develop, build and purchase a PV system. As a result, an increase in interest rates or lending rates could make it difficult for our customers or our systems business to secure the financing necessary to develop, build, purchase or install a PV 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. Due to the overall economic outlook, our end-users may change their decision or change the timing of their decision to develop, build, purchase or install a PV system. In addition, we believe that a significant percentage of our end-users install PV systems as an investment, funding the initial capital expenditure through a combination of equity and debt. An increase in interest rates and/or lending rates could lower an investor's return on investment in a PV system, increase equity return requirements or make alternative investments more attractive relative to PV systems, and, in each case, could cause these end-users to seek alternative investments. A reduction in the supply of project debt financing or tax equity investments could reduce the number of solar projects that receive financing and thus lower demand for solar modules. As described above under "Item 1: Business — Sales and Marketing — Economic Incentives," the 30% grant in lieu of the federal investment tax credit under the ARRA is set to expire and unless extended, will not be available for solar installations that begin construction on or after January 1, 2011. If such program is not extended, total tax equity availability could be reduced which may adversely affect our ability to arrange financing for utility-scale projects and may adversely affect the attractiveness of the U.S. solar market.

We currently sell a substantial portion of our solar modules under Long-Term Supply Contracts, and we allocate a significant amount of our production to satisfy our obligations under these contracts. These customers buy our modules with the expectation that they will be able to resell them in connection with the development of PV systems. As discussed above, many of these projects depend on the availability of debt and equity financing. A prolonged, material disruption to the supply of project finance could adversely affect our customers' ability to perform under these agreements. In the event of default by one or more of these customers, we may be unable to sell these modules at the prices specified in our Long-Term Supply Contracts, especially if demand for PV systems softens or supply of solar modules increases. Also, we may decide to lower our average selling price to certain customers in certain markets in response to changes in economic circumstances of our customers, their end markets or the capital markets. See "Item 1: Business — Segment Information — Components Business — Customers" for a description of previous pricing adjustments under our Long-Term Supply Contracts.

We currently depend on a limited number of customers, with five customers accounting for a majority of our components business' net sales last year. The loss of, or a significant reduction in orders from, any of these customers could significantly reduce our net sales and negatively impact our operating results.

We currently sell substantially all of our solar modules to customers headquartered throughout the European Union. During 2009, our five largest customers for our components business each accounted for between 10% and 19% of our component business' net sales. Our customer base within our components business is currently concentrated to a significant extent in Germany, and therefore the likely additional German feed-in tariff reductions currently under discussion could reduce demand and/or price levels for our modules sold to these customers. The loss of any of our large customers, their inability to perform under their contracts, or their default in payment could significantly reduce our net sales and adversely impact our operating results. Our customers face significant challenges under current economic conditions, including lack of capital to finance solar projects and rising costs associated with leasing or otherwise acquiring land and rooftops for solar projects. We believe that we can mitigate this risk by re-allocating modules to other customers if the need arises, but we may be unable, in whole or in part, to mitigate the reduced demand for our modules. In the event that we determine that our planned production of solar modules exceeds the demand we anticipate, we may decide to reduce or halt production of solar modules in our manufacturing facilities. However, we may be unable to anticipate and respond to the oversupply of solar modules because we have limited visibility into our customers' inventories.

Risks Related to Regulations

Existing regulations and policies and changes to these regulations and policies may present technical, regulatory and economic barriers to the purchase and use of photovoltaic products, which may significantly reduce demand for our solar modules.

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 photovoltaic products and investment in the research and development of photovoltaic technology. For example, without a mandated regulatory exception for photovoltaic 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 systems, it is likely that they would increase the cost to our end-users of using PV systems which could make them less desirable, thereby harming our business, prospects, results of operations and financial condition. In addition, electricity generated by PV systems mostly competes 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 systems to achieve lower prices in order to compete with the price of electricity from other sources.

We anticipate that our solar modules and their installation will be subject to oversight and regulation in accordance with national and local ordinances relating to building codes, safety, environmental protection, utility interconnection and metering and related matters. It is difficult to track the requirements of individual states and design equipment to comply with the varying standards. Any new government regulations or utility policies pertaining to our solar modules may result in significant additional expenses to us, our resellers and their customers and, as a result, could cause a significant reduction in demand for our solar modules.

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 level. 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. We have incurred and will continue to incur significant costs and capital expenditures 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. 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, results of operations and financial condition.

In addition, our products contain cadmium telluride and cadmium sulfide. Elemental cadmium and certain of its compounds are regulated as hazardous due to the adverse health effects that may arise from human exposure. Although the risks of exposure to cadmium telluride are not believed to be as serious as those relating to exposure to elemental cadmium, the chemical, physical and toxicological properties of cadmium telluride have not been thoroughly investigated and reported. 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. In addition, we believe the risk of exposure to cadmium or cadmium compounds from our end-products is limited by the fully encapsulated nature of these materials in our products, the physical properties of cadmium compounds used in our products and the implementation in 2005 of our collection and recycling program for our solar modules. While we believe that these factors and procedures are sufficient to protect our associates, end-users and the general public from cadmium exposure, we cannot assure 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, as well as damage to our reputation and heightened regulatory scrutiny of our products, 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 or results of operations.

The use of cadmium in various products is also coming under increasingly stringent governmental regulation. Future regulation in this area could impact the manufacture, 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 2002/95/EC on the Restriction of the Use of Hazardous Substances in electrical and electronic equipment (RoHS Directive), restricts the use of certain hazardous substances, including cadmium, in specified products. Other jurisdictions, such as China have adopted similar legislation or are considering doing so. Currently, PV solar modules are not subject to the RoHS Directive; however, the RoHS Directive allows for future amendments subjecting additional products to the requirements and the scope. Applicability and the products included in the Directive may also change. In December 2008, the European Commission issued its proposed revision of the RoHS Directive. This proposed revision did not include photovoltaic solar modules in the scope of RoHS, but is now being amended by both the European Parliament and the European Union Members States as part of the normal European Union legislative process. The European Council and the European Parliament are currently considering an "open scope" approach to the RoHS Directive under which all Electrical and Electronic Equipment (EEE) products would be included in the scope of the RoHS Directive unless specifically excluded or exempted from coverage. As part of these discussions, exclusion for PV panels from the RoHS Directive is being considered. A final legislative agreement on the RoHS Directive is not expected until 2011 at the earliest. If PV modules are included in the scope of RoHS without an exemption or exclusion, we would be required to redesign our solar modules to eliminate cadmium in order to continue to offer them for sale within the European Union, which would be impractical. In such event, the European Union market would be in effect closed to us, which could have a material adverse effect on our business, financial condition and results of operations. In 2009, 86% of our total net sales were generated from module sales in the European Union. In addition, some of our competitors are increasingly focusing on our modules' use of cadmium telluride in an attempt to gain a competitive advantage over us. If such actions are successful, they could result in a loss of sales and potentially limit our growth.

Risks Related to our Operations, Manufacturing and Technology

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

We have a limited operating history. Although we began developing our predecessor technology in 1987, we did not launch commercial operations until we qualified our pilot production line in January 2002. We qualified the first production line at our Ohio plant in November 2004, the second and third production lines at our Ohio plant in August 2006, our German plant in the third quarter of 2007, and our Malaysian plants in 2008 and 2009. Because these production lines have only been in operation for a limited period of time, our historical operating results may not

provide a meaningful basis for evaluating our business, financial performance and prospects. While our net sales grew from $135.0 million in 2006 to $2.1 billion in 2009, 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 generally more accessible to our customers to finance the cost of developing solar projects and economic incentives for solar power in certain core markets (such as the German feed-in tariff) were more favorable. Accordingly, you should not rely on our results of operations for any prior period as an indication of our future performance. See “Item 1: Business — Segment Information — Components Business — Customers” for a description of previous pricing adjustments under our Long-Term Supply Contracts.

We face intense competition from manufacturers of crystalline silicon solar modules, thin film solar modules and solar thermal and concentrated photovoltaic systems; if global supply exceeds global demand, it could lead to a reduction in the average selling price for photovoltaic modules.

The solar energy and renewable energy industries are both highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete with the larger electric power industry. Within the global photovoltaic industry, we face competition from crystalline silicon solar module manufacturers, other thin film solar module manufacturers and companies developing solar thermal and concentrated photovoltaic technologies.

Even if demand for solar modules continues to grow, the rapid expansion plans of many solar cell and module manufacturers could create periods where supply exceeds demand. In addition, we believe the significant decrease in the cost of silicon feedstock will provide significant reductions in the manufacturing cost of crystalline silicon solar modules and lead to pricing pressure for solar modules and potentially the oversupply of solar modules, including in key markets such as Germany and Spain.

During any such period, our competitors could decide to reduce their sales price in response to competition, even below their manufacturing cost, in order to generate sales. As a result, we may be unable to sell our solar modules 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.

Thin film technology has a short history and our thin film technology and solar modules may perform below expectations; problems with product quality or performance may cause us to incur warranty expenses, damage our market reputation and prevent us from maintaining or increasing our market share.

Researchers began developing thin film semiconductor technology over 20 years ago, but were unable to integrate the technology into a solar module production line until recently. Our oldest active production line has been in operation since November 2004, and the oldest solar modules manufactured during the qualification of our pilot line have been in use since 2001. As a result, our thin film technology and solar modules do not have a sufficient operating history to confirm how our solar modules will perform over their estimated 25-year useful life. We perform a variety of quality and life tests under different conditions. However, if our thin film technology and solar modules perform below expectations, we could lose customers and face substantial warranty expense.

Our solar modules are sold with a five-year materials and workmanship warranty for technical defects and a 25-year warranty against declines of more than 10% of their initial rated power in the first 10 years following their installation and 20% of initial rated power in the following 15 years, respectively. As a result, we bear the risk of extensive warranty claims long after we have sold our solar modules and recognized net sales. As of December 26, 2009, our accrued warranty liability was $22.6 million, of which, $8.2 million was classified as current and $14.4 million was classified as noncurrent.

While our power output warranty extends for 25 years, our oldest solar modules manufactured during the qualification of our pilot production line have only been in use since 2001. Because of the limited operating history of our solar modules, we have been required to make assumptions regarding the durability and reliability of our solar modules. Our assumptions could prove to be materially different from the actual performance of our solar modules, causing us to incur substantial expense to repair or replace defective solar modules in the future. For example, our glass-on-glass solar modules could break, delaminate or experience power degradation in excess of expectations, our manufacturing operations could be subject to process variations that could cause affected modules to underperform compared to our expectations. Any widespread product failures may damage our market reputation and cause our sales to decline and require us to repair or replace the defective modules, which could have a material adverse effect on our financial results.

If our estimates regarding the future cost of collecting and recycling our solar modules 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 pre-fund our estimated future obligation for collecting and recycling our solar modules based on the present value of the expected future cost of collecting and recycling the modules, which includes the cost of packaging the solar modules for transport, the cost of freight from the solar module’s installation site to a recycling center, the material, labor and capital costs of the recycling process and an estimated third-party profit margin and return on risk for collection and recycling. We base our estimate on our experience collecting and recycling solar modules that do not

pass our quality control tests and solar modules returned under our warranty and on our expectations about future developments in recycling technologies and processes and 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 also face a significant unplanned cash burden at the time we realize our estimates are incorrect or end-users return their solar modules, which could harm our operating results. In addition, our end-users can return their solar modules at any time. As a result, we could be required to collect and recycle our solar modules earlier than we expect and before recycling technologies and processes improve.

Our failure to further refine our technology and develop and introduce improved photovoltaic products could render our solar modules uncompetitive or obsolete and reduce our net sales and market share.

We will need to invest significant financial resources in research and development to continue to improve our module conversion efficiency and to otherwise keep pace with technological advances in the solar energy 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 photovoltaic technologies, including copper indium gallium diselenide and amorphous silicon, which could produce solar modules that prove more cost-effective or have better performance than our solar modules. In addition, other companies could potentially develop a highly reliable renewable energy system that mitigates the intermittent power production drawback of many renewable energy systems, or offers 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 levelized cost of electricity associated with such new system is higher than that of our systems. As a result, our solar modules may be rendered obsolete by the technological advances of our competitors, which could reduce our net sales and market share.

In addition, we often forward price our products and services (including through our Long-Term Supply Contracts and power purchase agreements) in anticipation of future cost reductions, and thus an inability to further refine our technology and execute our long-term cost reduction objectives could adversely affect our margins and operating results.

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. As of December 26, 2009, we held 22 patents in the United States, which will expire at various times between 2012 and 2026, and had 96 patent applications pending. We also held 28 patents and had over 100 patent applications pending in foreign jurisdictions. 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. While 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 assure you 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 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.

Many of our key raw materials and components are either sole-sourced or sourced by 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. Many of our key raw materials and components are either sole-sourced or sourced by 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, many of our suppliers are small companies that may be unable to supply our increasing demand for raw materials and components as we implement our planned rapid expansion. 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. Raw materials and components from new suppliers may also be less suited for our technology and yield solar modules with lower conversion efficiencies, higher failure rates and higher rates of degradation than solar modules manufactured with the raw materials from our current suppliers. A constraint on our production may cause us to be unable to meet our obligations under our Long-Term Supply Contracts, which would have an adverse impact on our financial results.

A disruption in our supply chain for cadmium telluride, our semiconductor material, could interrupt or impair our ability to manufacture solar modules.

A key raw material we use in our production process is a cadmium telluride compound. Tellurium is mainly produced as a by-product of copper refining, and its supply is therefore largely dependent upon demand for copper. Currently, we purchase these raw materials from a limited number of suppliers. If our current suppliers or any of our future suppliers are unable to perform under their contracts or purchase orders, our operations could be interrupted or impaired. In addition, because our suppliers must undergo a lengthy qualification process, we may be unable to replace a lost supplier in a timely manner and on commercially reasonable terms. Our supply of cadmium telluride could also 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 cost of our raw materials through to our customers because our customer contracts do not adjust for raw material price increases and are generally for a longer term than our raw material supply contracts. A reduction in our production could result in our inability to meet our commitments under our Long-Term Supply Contracts, all of which would have an adverse impact on our financial results.

Our future success depends on our ability to build new manufacturing plants and add production lines in a cost-effective manner, both of which are subject to risks and uncertainties.

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

- making changes to our production process that are not properly qualified or that may cause problems with the quality of our solar modules;

- delays and cost overruns as a result of a number of factors, many of which may be beyond our control, such as our inability to secure successful contracts with equipment vendors;

- our custom-built equipment taking longer and costing more to manufacture than expected and not operating as designed;

- delays or denial of required approvals by relevant government authorities;

- being unable to hire qualified staff;

- failure to execute our expansion plans effectively; and

- manufacturing concentration risk resulting from an expected 24 out of 34 announced production lines worldwide by the end of 2012 being located in one geographic area, Malaysia.

If our future production lines are not built in line with our committed schedules it may impair our growth plans, if our 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.

Currently, our production lines have a limited history of operating at full capacity. Future production lines could produce solar modules that have lower 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. Although we will be using the same systematic replication process to build our French manufacturing center and expand our Malaysian manufacturing center that we successfully used when building and expanding our existing German and Malaysian production facilities, our replication risk in connection with building production lines at our French manufacturing center and other future manufacturing plants could be higher than our replication risk was in building and expanding our existing German and Malaysian production facilities because two of these new production lines are located in a new geographic area for us, which could entail other factors that may lower their operating metrics. If we are unable to systematically replicate our production lines to meet our committed schedules 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 this may impair our growth plans and/or cause us to lose customers, resulting in lower net sales, higher liabilities and lower net income than we anticipate. In addition, we might be unable to produce enough solar modules to satisfy our contractual requirements under our Long-Term Supply Contracts.

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 the equipment manufacturer, which then undertakes 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 and we could be unable to produce enough solar modules to satisfy our contractual requirements under our Long-Term Supply Contracts. In addition, the failure of our equipment suppliers to supply equipment in a timely manner or on commercially reasonable terms could delay our expansion plans and otherwise disrupt our production schedule or increase our manufacturing costs, all of which would adversely impact our financial results.

If we are unable to further increase the number of sellable watts per solar module and reduce our manufacturing cost per watt, we will be in default under certain of our Long-Term Supply Contracts and our profitability could decline.

Our Long-Term Supply Contracts either (1) require us to increase the minimum average number of watts per module over the term of the contract or (2) have a price adjustment for increases or decreases in the number of watts per module relative to a base number of watts per module. Our failure to achieve these metrics could reduce our profitability or allow some of our customers to terminate their contracts. In addition, all of our Long-Term Supply Contracts in Europe specify a sales price per watt that declines at the beginning of each year through the expiration date of each contract in 2012. Our profitability could decline if we are unable to reduce our manufacturing cost per watt by at least the same rate at which our contractual prices decrease. Furthermore, our failure to reduce cost per watt by increasing our efficiency may impair our ability to enter new markets that we believe will require lower cost per watt for us to be competitive and may impair our growth plans.

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

We expect to continue to expand our business in order to meet our contractual obligations, satisfy demand for our solar modules and maintain or increase market share. However, depending on the amount of additional contractual obligations we enter into and our ability to expand our manufacturing capabilities in accordance with our expectations, we might be unable to produce enough solar modules to satisfy our contractual requirements under our Long-Term Supply Contracts and other commitments, in which case we could be in default under such agreements and our operating results may be adversely affected.

Following the completion of our expansion of our Ohio plant in 2010, we will have grown from one production line in Ohio in 2005 to 24 production lines with an annual global manufacturing capacity of approximately 1282MW (based on the fourth quarter of 2009 average per line run rate at our existing plants). Construction of our two-line French manufacturing facility is expected to begin in the second half of 2010 and a full annual production capacity of more than 100MW is expected to be reached in early 2012. Our eight-line Malaysian expansion is expected to start production in the first half of 2011.

To manage the continued rapid expansion of our operations, we will be required to continue to improve our operational and financial systems, procedures and controls and expand, train and manage 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 procedures and controls might be inadequate to support our future growth. 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.

Implementing a new enterprise resource planning system could interfere with our business or operations and could adversely impact our financial position, results of operations and cash flows.

We are in the process of implementing a new enterprise resource planning (ERP) system. We expect to complete Phase 1 of this implementation in the second half of 2010. This project requires significant investment of capital and human resources, the re-engineering of many processes of our business, and the attention of many associates and managers who would otherwise be focused on other aspects of our business. Any disruptions, delays or deficiencies in the design and implementation of the new ERP system could result in