FIRST SOLAR, INC.
Form ARS
April 22, 2009

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2008 Annual Report

Boulder City,NV, USA (10MW AC);Sempra Generation Expanding to 58MW AC (2009/2010)

Clean Affordabl Sustainable

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First Solar s mission is to create enduring value by enabling a world powered by clean, affordable solar electricity.

First Solar, Inc. (NASDAQ: FSLR) manufactures solar modules with an advanced semiconductor technology and provides comprehensive photovoltaic (PV) solutions that significantly reduce solar electricity costs. Our module manufacturing costs are the lowest in the world due to our proprietary technology, high-volume, continuous flow manufacturing, large scale production, operational excellence, and continuous improvement methodologies. We achieved a major solar industry milestone in the fourth quarter of 2008 by reducing our module manufacturing cost to less than $1/watt.

From raw material sourcing through end-of-life collection and recycling, First Solar is focused on providing cost-effective energy solutions that protect and enhance the environment. First Solar uses a mining byproduct to produce the semiconductor material in its modules, successfully up-cycling waste to produce solar electricity. First Solar s unique product design, material sourcing strategy, high-volume, continuous flow manufacturing process, and recycling technology combine to minimize the carbon footprint and energy payback time for solar electricity, providing a superior solution to climate change. First Solar has set the benchmark for environmentally responsible product life cycle management by introducing the industry s first prefunded, comprehensive collection and recycling program for solar modules. By enabling clean, renewable electricity at affordable prices, First Solar provides an economically and environmentally responsible alternative to existing peaking fossil-fuel electric generation.

First Solar has grown from about 200 associates in 2002 to over 4,000 today. For more information about First Solar, please visit www.firstsolar.com.

All financial numbers in this report are based on U.S. Generally Accepted Accounting Principles.

This report contains forward-looking statements within the meaning of the United States federal securities laws. These forward-looking statements do not constitute guarantees of future performance. These forward-looking statements are based on current information and expectations, are subject to uncertainties and changes in circumstances, and involve a number of factors that could cause actual results to differ materially from those anticipated by these forward-looking statements, including risks described in the company s most recent annual report on Form 10-K, and other filings with the Securities and Exchange Commission. First Solar assumes no obligation to update any forward-looking information contained in this report or with respect to the information described herein.

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To Our Investors

2008 was a year of strong growth and performance. We advanced our mission of providing clean, affordable solar electricity while creating enduring value for our stakeholders. We met our operational goals, developed new and existing markets in Europe and the U.S., and delivered strong financial results.

Michael J. Ahearn
CEO, Chairman

Module manufacturing production increased 144% year over year, to over 500 megawatts (MW), and line throughput improved 8% year over year. Our new Malaysian manufacturing center was constructed and ramped up ahead of original schedules, continuing a trend of operational excellence established with prior plant expansions. In March of 2009, First Solar reached a cumulative shipment volume of 1 gigawatt (GW). Our increased production scale, along with technology and manufacturing process improvements, contributed to continued reductions in manufacturing costs. Module manufacturing cost/watt decreased 12% year over year. We achieved $0.98/watt in the fourth quarter of 2008 and are proud to be the first solar company to reduce manufacturing costs below $1/watt. In the second half of 2009, we expect our annual capacity to reach 1.1GW which, when combined with our cost advantage, positions us well to expand our market leadership.

Growth in Germany remained solid and we made further progress in penetrating markets in Italy and France. German government feed-in tariffs (FIT) and financing support continued to support the market and Germany s solar manufacturing, equipment, and installation industry. First Solar entered into additional customer contracts that grew commitments to approximately $6 billion through 2012. We made progress in developing our presence in the U.S. utility market by creating key customer relationships, by completing a 10MW AC solar plant for Sempra Generation in Boulder City, Nevada, and by completing two Southern California Edison (SCE) rooftop pilot projects that are part of SCE s larger proposed 250MW AC rooftop initiative. What we learned from engineering, designing, and constructing these U.S. power plants will be used to lower our costs further in the future. In addition, we signed an agreement with Edison Mission Energy to develop future utility scale projects in the U.S.

First Solar delivered strong financial results as revenues increased 147% year over year to $1.2 billion, resulting in an increase of our diluted earnings per share (EPS) of 109% year over year, to $4.24/share. Our operating margin improved to 35.1% of net sales. We grew our cash and marketable securities balance to $822 million and achieved positive cash flows. We also contributed to the economies where we operate by employing over 4,000 First Solar associates worldwide to date, and making capital investments of $459 million in 2008.

In sum, we entered 2009 well positioned for further growth with the lowest-cost technology in the industry, over 1GW of manufacturing scale, a strong financial position, and strong global customer partnerships.

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Although 2009 will be a more challenging year for the industry, First Solar is well positioned to grow. The solar industry has moved from under-supply in 2008 to over-supply in 2009. This situation has been driven by the credit crisis reducing the availability of cost effective financing, reduced consumer spending, and an industry-wide overbuilding of capacity. In addition, higher costs of project financing and lower costs of natural gas, both outgrowths of the current economic slump, have made it more difficult for solar electricity to compete on price with conventional sources of electricity.

Despite these conditions, we remain confident in First Solar s ability to continue to grow and deliver solid financial results. Our technology, operational excellence, and manufacturing scale will enable us to continue to reduce costs, allowing us to profitably lower solar module prices as needed to drive high-volume market demand under challenging financial conditions. First Solar s track record of delivering on its commitments is becoming an important distinguishing factor in the marketplace as customers, project investors, and lenders increasingly consider financial strength, product performance history, reliability, and electricity generation system costs in their decision-making. In addition, our long-term contracts and customer relationships provide a degree of resiliency during difficult times and our recently announced acquisition of one of the largest utility-scale solar project development pipelines in the U.S. from OptiSolar provides a multi-year project development roadmap in the U.S.

By focusing on the needs of our customers, executing on the fundamental drivers of our business, and leveraging our strengths, we expect to emerge from the current economic slump with a solidified leadership position in the industry and a strong platform for continued growth.

The world is transforming to a low-carbon infrastructure to reduce greenhouse gases and mitigate climate change. We continue to focus on reducing the cost of solar electricity to make it a viable alternative to traditional energy sources. To achieve this objective, we are targeting another 35% reduction in our PV module manufacturing costs to $0.65/watt by 2012, with further cost reductions planned beyond 2012. These cost reductions will be achieved by continuing to improve conversion efficiency and line throughput, reducing material costs, and driving volume scale to further reduce overhead costs on a cost-per-watt basis. In addition, balance of system costs such as mounting hardware, installation labor, and inverters represent more than one half of the capital costs of a PV project. We are striving to reduce these by about 40% by 2012, to $1/watt, by improving module efficiencies, increasing volume procurement around standardized hardware platforms, and reducing installation time.

We plan to use these lower costs to reduce electricity prices in order to expand solar electricity to new markets. Our 10MW AC Sempra Generation solar plant is an early

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example of our progress in this regard. Sempra s recent decision to expand the site to 58MW AC demonstrates our ability to provide real, cost-effective energy solutions for utility scale projects.

The market outlook over the next three to five years appears promising as both Europe and the U.S. have announced aggressive support for renewable energy expansion through incentives and regulations. The European Union recently reinforced its commitment to renewables with a directive that commits the EU to a 20% renewable energy goal by 2020. Germany and other European countries continue to be strong supporters of renewable energy through FIT programs that create markets with long-term visibility and volume, facilitating scale, cost reduction, and investment of private capital. To facilitate the realization of Europe s renewables mandate as well as the adoption of renewables in other parts of the world, KfW, the German reconstruction bank, is actively supporting the financing of and investment in such renewable projects as a matter of priority, helping to alleviate project financing constraints. We anticipate that other governmental agencies will become active in facilitating project financing for renewable projects in Europe over the coming months.

In the U.S., the American Recovery and Reinvestment Act stimulus bill of 2009 (ARRA) contains several provisions designed to alleviate renewable energy project financing constraints resulting from the economic downturn. The ARRA establishes a temporary grant program that will allow commercial solar customers to receive a cash payment to cover 30% of the cost of installing solar equipment in lieu of the federal investment tax credit. The ARRA also appropriated $6 billion for a new loan guarantee program which the government estimates could support up to $60 billion of loans specifically for renewable energy and transmission projects. In addition, ARRA includes up to $2.3 billion for a new 30% investment tax credit for U.S. based production facilities of renewable energy products.

President Obama and Congressional leaders have expressed desire to enact a number of initiatives to accelerate the U.S. transition to a low-carbon energy infrastructure. These include a cap and trade mechanism to curb carbon emissions, an expansion of the transmission grid, plus further additional stimuli for renewable energy and energy efficiency. The extent to which the public sector has embraced renewable energy as a means of mitigating climate change, enhancing energy independence and diversity, and stimulating economic growth bodes well for the future of the solar industry.

Conclusion

First Solar made significant progress in all key areas in 2008. We are well positioned for 2009 and beyond, and we are encouraged about the long-term prospects for the industry. My heartfelt thanks to all First Solar associates whose passion and dedication are making this journey possible. Together with our customers, suppliers, market partners, public officials, and board of directors, we are advancing our mission of providing clean, affordable solar electricity while creating enduring value for our stakeholders.

Sincerely,

Michael J. Ahearn

Chief Executive Officer, Chairman

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Megawatts Produced 2006 2007 2008 Earnings per Diluted Share 4.24 2.03 0.07 2006 2007 2008 $1.60-$1.40- Module Cost/Watt Achieved <$1.00/watt 2007 2008 2006 Net & Operating Income Net Inc. Opine. 2006 2008 2007 Cash & Mkt. Securities vs Debt $1000 - ___Total Cash ,^ 822M Total Debt $500 - -198 $0 -$250 2006 2007 2008 First Solar

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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 27, 2008

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 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. o

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 Smaller reporting company o
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes 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, 2008, the last business day of the registrant s most recently completed second fiscal quarter, was approximately $10,046,225,940 (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 18, 2009, 81,643,905 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 2009, 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.

Form 10-K for the Fiscal Year Ended December 27, 2008
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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 y ended December 27, 2008, December 29, 2007 and December 30, 2006.

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NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Securities Exchange Act of 1934 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 might , will , could , predict and continue , the negative or plural of these words and other comparable terminology forward-looking statements are only predictions based on our current expectations and our projections about future events. All forward-looking statements included in this Annual Report on Form 10-K are based upon information available to us as of the filing date of this Annual Report on Form 10-K. 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*

We design and manufacture solar modules using a proprietary thin film semiconductor technology that has allowed us to reduce our average solar module manufacturing costs to among the lowest in the world. In 2008, our average manufacturing costs were $1.08 per watt, which we believe is significantly less than those of traditional crystalline silicon solar module manufacturers. By continuing to expand production and improve our technology and manufacturing process, we believe that we can further reduce our manufacturing costs per watt and maintain our cost advantage over traditional crystalline silicon solar module manufacturers.

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 cadmium telluride semiconductor material to convert sunlight into electricity. In less than three hours, we transform a 2ft × 4ft (60cm × 120cm) sheet of glass into a complete solar module, using approximately 1% of the semiconductor material used by other manufacturers to produce crystalline silicon solar modules. 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.

We have long-term solar module supply contracts (the Long Term Supply Contracts) with one U.S. and fifteen European project developers, system integrators and operators that in the aggregate allow 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. During 2008, we amended a Long Term Supply Contract with one customer, which reduced the volume of solar modules delivered to such customer in 2008 and also reduced the volume of solar modules to be delivered over the remaining term of the agreement to such customer. During February 2009 we amended our Long Term Supply Contracts with two customers to accelerate the decline in the sales price per watt

under such contracts in 2009 and 2010 in exchange for increases in the volume of solar modules to be delivered under such contracts. We are currently in discussions with several other customers about making similar amendments to their Long Term Supply Contracts.

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Our customers typically develop, 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.

In order to satisfy our contractual requirements, we expanded our manufacturing capacity with the construction of four plants each with four production lines at our Malaysian manufacturing center. In August 2006, we expanded our Ohio plant from one to three production lines. In April 2007, we started initial production at a four line manufacturing plant in Germany, which reached its full capacity in the third quarter of 2007. Also in April 2007, we began construction of plant one of our Malaysian manufacturing center. In the third and fourth quarters of 2007, we began construction of plants two and three, respectively; and in the first quarter of 2008, we began construction of plant four. We completed the qualification of plants one and two of our Malaysian manufacturing center for full volume production in the second half of 2008. We expect plants three and four of our Malaysian manufacturing center to reach full capacity in the first half of 2009. Further, in October 2008, we commenced construction of our Ohio plant expansion, which is expected to include an additional production line and approximately 500,000 square feet of manufacturing, research and development and office space. We expect to complete plant construction in the first half of 2009, with full volume production expected by the second quarter of 2010. After plant four of our Malaysian manufacturing center and the Ohio expansion reach full capacity, we expect to have 24 production lines and an annual global manufacturing capacity of approximately 1145MW by the end of 2010 (based on the fourth quarter of 2008 average per line run rate at our existing plants).

Acquisition of Turner Renewable Energy, LLC

On November 30, 2007, we completed the acquisition of Turner Renewable Energy, LLC, a privately held company which designed and deployed commercial solar power system projects for utilities and Fortune 500 companies in the United States. We have integrated the operations from this acquisition into our solar power systems and project development business. This business sells solar power systems directly to system owners. These systems include both our solar modules and balance of system components that we procure from third parties. We also sell integrated services related to the development of commercial solar projects in the United States, such as system design, engineering, procurement of permits and balance of system components, construction management, monitoring and maintenance as part of a system solution delivery. This acquisition has created a platform for our systems business in North America to deliver solar electricity solutions to utility companies.

Products

Solar Modules

Each solar module is approximately 2ft × 4ft (60cm × 120cm) and had an average rated power of approximately 73 watts, 70 watts and 64 watts for 2008, 2007 and 2006, 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 with approximately 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.

Certifications

We have participated, or are currently participating, in laboratory and field tests with the National Renewable Energy Laboratory, the Arizona State University Photovoltaic Testing Laboratory, the Fraunhofer Institute for Solar Energy,

TÜV Immissionsschutz und Energiesysteme GmbH and the Institute für Solar Energieversorgungstechnik. Currently, we have approximately 10,000 solar modules installed worldwide at test sites designed to collect data for field performance validation. Using data logging equipment, we also monitor more than one million solar modules, representing approximately 69MW of installed photovoltaic systems, in use by end-users that have purchased

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systems using our solar modules. The modules in these monitored systems represent approximately 11% of all the solar modules we shipped from 2002 through 2008.

We maintain all certifications required to sell solar modules in the markets we serve or expect to serve, including UL 1703, IEC 61646, Safety Class II and CE.

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 owner 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 purchaser of our solar modules to a subsequent purchaser. As of December 27, 2008, our accrued warranty liability was $11.9 million; of which, $4.0 million was classified as current and $7.9 million was classified as non-current.

Collection and Recycling Program

End-users can return their solar modules to us at any time for collection and recycling 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 20 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 have developed a recycling process for manufacturing scrap, warranty returns and end of life modules that produces glass suitable for use in the production of new glass products and extracts metals that will be further processed by a third party supplier to produce semiconductor materials for reuse in our solar modules.

Services

Our solar power systems and project development business provides a variety of integrated services to our customers as part of a system solution delivery. These services include solar power system design, procurement of permits and balance of system components, construction management, monitoring and maintenance.

Manufacturing

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 o 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.

Historically, all of our solar modules were produced at our Perrysburg, Ohio facility, which has received both an ISO 9001:2000 quality system certification and ISO 14001:2004 environmental system certification. In April 2007, we started initial production at our manufacturing facility in Frankfurt/Oder, Germany which has received all applicable licenses and permits to operate in accordance with German law and has received both an ISO 9001:2000

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quality system certification and ISO 14001:2004 environmental system certification. In April 2008, we started initial production at plant one of our manufacturing center in Kulim, Malaysia which has received an ISO 9001:2000 quality system certification and we anticipate the Malaysian manufacturing center will obtain an ISO 14001:2004 environmental system certification in the second quarter of 2009.

Raw Materials

Our manufacturing process uses approximately 20 types of raw materials and components to construct a complete solar module. Of these raw materials and components, the following nine are critical to our manufacturing process: TCO coated front glass, cadmium sulfide, cadmium telluride, photo resist, laminate, tempered back glass, cord plate/cord plate cap, lead wire (UL and TÜV) 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. One critical raw material in our production process is cadmium telluride.

Customers

We have Long Term Supply Contracts with sixteen principal customers for the sale of solar modules. These customers include solar power system project developers, system integrators and operators of renewable energy projects that are headquartered throughout the European Union and the United States. The Long Term Supply Contracts in the aggregate allow 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. During 2008, we amended a Long Term Supply Contract with one customer, which reduced the volume of solar modules delivered to such customer in 2008 and also reduced the volume of solar modules to be delivered over the remaining term of the agreement to such customer. During February 2009 we amended our Long Term Supply Contracts with two customers to accelerate the decline in the sales price per watt under such contracts in 2009 and 2010 in exchange for increases in the volume of solar modules to be delivered under such contracts. We are currently in discussions with several other customers about making similar amendments to their Long Term Supply Contracts.

During 2008, our principal customers were Blitzstrom GmbH, Colexon Energy AG (previously Reinecke + Pohl), Conergy AG, Juwi Solar GmbH and Phoenix Solar AG. During 2008, each of these five customers individually accounted for between 11% and 19% of our net sales. All of our other customers individually accounted for less than 10% of our net sales during 2008. 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.

Sales and Marketing

Since 2003, our focus has been on grid-connected ground or large roof mounted solar power systems in Germany and other European Union countries with feed-in tariff subsidies that enable solar power system owners to earn a reasonable rate of return on their capital. Several of our principal customers were authorized in 2007 and 2008 to sell our solar modules in the United States. In November 2007, we completed the acquisition of Turner Renewable Energy, LLC, which has become the basis for developing solar electricity solutions for utility companies in the United States that are seeking cost-effective renewable energy solutions for the purpose of meeting renewable portfolio standard requirements.

Economic Incentives

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

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

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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, 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.

Tax incentive programs exist in the United States at both the federal and state level and can take the form of investment tax credits, accelerated depreciation, sales and property tax exemptions. At the United States federal level, investment tax credits for business and residential solar systems have gone through several cycles of enactment and expiration since the 1980 s. Several state governments also facilitate low interest loans for photovoltaic systems, either through direct lending, credit enhancement or other programs.

Regulations and policies relating to electricity pricing and interconnection also encourage distributive generation with photovoltaic systems. Photovoltaic 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 photovoltaic 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 photovoltaic systems to achieve lower prices in order to compete with the price of electricity. In addition, interconnection policies often enable the owner of a photovoltaic system to feed solar electricity into the power grid without interconnection costs or standby fees.

Research, Development and Engineering

We continue to devote a substantial amount of resources to research and development with the objective of lowering the per watt price of solar electricity generated by photovoltaic systems. With the objective of reducing the per watt manufacturing cost of electricity generated by photovoltaic systems using our solar modules, we focus our research and development on the following areas:

Increase the conversion efficiency of our solar modules. We believe the most promising ways of increasing the conversion efficiency of our solar modules are maximizing the number of photons that reach the absorption layer of the semiconductor material so that they can be converted into electrons, 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.

System optimization. We are also working to reduce the cost and optimize the effectiveness of the other components in a photovoltaic system. We maintain a substantial effort to collect and analyze actual field performance data from photovoltaic systems that use our modules. We continuously collect data from test sites comprising approximately 10,000 modules installed in varying climates and applications. We also monitor more than one million solar modules, representing approximately 69MW of installed photovoltaic systems, in use by end-users that have purchased photovoltaic systems using our modules. We use the data collected from these sources to correlate field performance to various manufacturing and laboratory level metrics, identify opportunities for module and process improvement and improve the performance of systems that use our modules. In addition, we use this data to enhance predictive models and simulations for end-users.

Research and development expenses for the years ended December 27, 2008, December 29, 2007 and December 30, 2006 were $33.5 million, $15.1 million and $6.4 million, respectively.

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. Our scientists and engineers collaborate across all

manufacturing plants to drive improvements. We typically implement, validate and qualify improvements at the Ohio plant before we deploy them to all of our 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.

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We maintain active collaborations with the National Renewable Energy Laboratory (a division of the United States Department of Energy), Brookhaven National Laboratory and several universities.

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 employee and third party confidentiality agreements, to safeguard our intellectual property. As of December 27, 2008, we held 23 patents in the United States, which will expire at various times between 2009 and 2026, and had 37 patent applications pending. We also held 17 patents and had over 70 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 27, 2008, we held two trademarks, First Solar and First Solar and Design, in the United States. We have also registered our First Solar and Design mark in China, India, Japan, Korea and the European Union and we are seeking registration in 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 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 solar cells, technology or business plans.

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

Competition

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 within the larger electric power industry. Within the renewable energy industry, we compete with other renewable energy technologies including hydro, wind, geothermal, bio-mass and tidal. Within the solar energy industry, we believe that our main sources of competition are crystalline silicon solar module manufacturers, other thin film solar 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 and reliability.

At the end of 2008, the global photovoltaic industry consisted of more than 150 manufacturers of solar cells and modules. Within the photovoltaic industry, we face competition from numerous crystalline silicon solar cell and module manufacturers. We also face competition from thin film solar module manufacturers.

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 are larger and have greater financial resources, larger production capacities 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.

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We also face competition from companies that are developing various solar thermal solutions for utility scale power plant applications. In addition to manufacturers of solar photovoltaic equipment, we face competition from companies developing concentrating photovoltaic systems and other renewable energy technologies.

Our solar power products and services also compete against other power generation sources supplied by utilities that burn conventional fossil fuels.

As we develop our solar power systems and development business and begin to offer solar electricity solutions to utilities, we expect to face competition from other providers of renewable energy solutions, including developers of photovoltaic, solar thermal and concentrated solar power systems and from developers of alternate forms of renewable energy projects.

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 foreign 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.

Associates

As of December 27, 2008, we had 3,524 associates (our term for full and part-time employees), including 2,912 in manufacturing. The remainder of our associates are in research and development, sales and marketing and general and administrative positions. None of our associates are 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. 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. In 2008, 94% of our net sales were generated from customers headquartered in the European Union. In the future, we expect to expand our operations in other European and Asian countries, and 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 23, Segment and Geographical Information, to our consolidated financial statements referenced in Item 15 of this Annual Report on Form 10-K for information about our net sales by geographic region for the years ended December 27, 2008, December 29, 2007 and December 30, 2006, and see our Management s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of this Annual

Report on Form 10-K for other information about our operations and activities in various geographic regions.

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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.

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 December 27, 2008 are as follows:

Name	Age	Position
Michael J. Ahearn	52	Chief Executive Officer, Chairman
Bruce Sohn	47	President, Director
Jens Meyerhoff	44	Chief Financial Officer
John T. Gaffney	48	Executive Vice President and Corporate Secretary
Mary Beth Gustafsson	48	Vice President, General Counsel
John Carrington	42	Executive Vice President, Global Marketing and Business Development

Michael J. Ahearn has served as the CEO and Chairman of First Solar since August 2000. Mr. Ahearn also served as President of First Solar from August 2000 to March 2007. From 1996 until November 2006, he was a Partner and President of the equity investment firm JWMA Partners, LLC, or JWMA (formerly True North Partners, LLC). Prior to joining JWMA, Mr. Ahearn practiced law as a partner in the firm of Gallagher & Kennedy. He received both a B.A. in Finance and a J.D. from Arizona State University.

Bruce Sohn was elected a director of First Solar in July 2003 and has served as President of First Solar since March 2007. 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. He graduated from the Massachusetts Institute of Technology with a degree in Materials Science and Engineering.

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.

John T. Gaffney joined First Solar in January 2008 as Executive Vice President and Corporate Secretary. Prior to joining First Solar, Mr. Gaffney practiced law at the firm of Cravath, Swaine & Moore LLP, where he was a partner since 1993. During his time at Cravath, Mr. Gaffney served as a key advisor to First Solar and advised numerous corporate and financial institution clients on merger, acquisition and capital markets transactions. Mr. Gaffney holds a B.A. from The George Washington University and an M.B.A. and J.D. from New York University.

Mary Beth Gustafsson joined First Solar in October 2008 as Vice President, General Counsel. 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

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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.

John Carrington joined First Solar in May 2008 as Executive Vice President, Global Marketing & Business Development. Mr. Carrington brings extensive global marketing experience from his leadership positions with General Electric spanning more than 15 years. Mr. Carrington previously served as general manager and chief marketing officer of General Electric Plastics (recently sold and re-named SABIC Innovative Plastics). While at GE, he also served as General Manager of automotive marketing in Tokyo, Japan; Pacific Marketing Director in Tokyo; and Commercial Director for GE s Noryl resin business in Selkirk, New York. Mr. Carrington holds a B.A. in Economics and Marketing from the University of Colorado.

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.

An increase in interest rates or lending rates or tightening of the supply of capital in the global financial markets 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 end-users depend on debt financing to fund the initial capital expenditure required to purchase and install a PV system. As a result, an increase in interest rates or lending rates could make it difficult for our end-users to secure the financing necessary to purchase and install a PV system on favorable terms, or at all and thus lower demand for our solar modules and 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 purchase and 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, 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.

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 supplies of solar modules increase. 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.

We currently depend on a limited number of customers, with five customers accounting for substantially all of our 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 2008, our five largest customers each accounted for between 11% and 19% of our net sales. The loss

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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.

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 portions of our Malaysian plants in 2008. 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 $48.1 million in 2005 to $1,246.3 million in 2008, 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. Accordingly, you should not rely on our results of operations for any prior period as an indication of our future performance.

We face intense competition from manufacturers of crystalline silicon solar modules, 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 indu