FIRST SOLAR, INC.
Form 10-K
February 27, 2013

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

Form 10-K

(Mark one)

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

For the fiscal year ended December 31, 2012

or

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number: 001-33156
First Solar, Inc.
(Exact name of registrant as specified in its charter)

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

350 West Washington Street, Suite 600
Tempe, Arizona 85281
(Address of principal executive offices, including zip code)
(602) 414-9300
(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Common stock, $0.001 par value	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act:
None

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes [x] No [ ]

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ ]

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

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

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

The aggregate market value of the registrant's common stock, $0.001 par value per share, held by non-affiliates of the registrant on June 30, 2012, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $906,292,728 (based on the closing sales price of the registrant's common stock on that date). As of February 22, 2013, 87,156,517 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 2013, 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 31, 2012

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Throughout this Annual Report on Form 10-K, we refer to First Solar, Inc. and its consolidated subsidiaries as "First Solar," the "Company," "we," "us," and "our." Our last three fiscal years ended on December 31, 2012, December 31, 2011, and December 31, 2010.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Securities Exchange Act of 1934 (the "Exchange Act") and the Securities Act of 1933, which are subject to inherent risks, uncertainties, and assumptions that are difficult to predict. All statements in this Annual Report on Form 10-K, other than statements of historical fact, are forward-looking statements. These forward-looking statements are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The forward-looking statements include statements, among other things, concerning: our business strategy, including anticipated trends and developments in and management plans for our business and the markets in which we operate; future financial results, operating results, revenues, gross margin, operating expenses, products, projected costs, and capital expenditures; our ability to continue to reduce the cost per watt of our solar modules; research and development programs and our ability to improve the conversion efficiency of our solar modules; sales and marketing initiatives; and competition. In some cases, you can identify these statements by forward-looking words, such as "estimate," "expect," "anticipate," "project," "plan," "intend," "seek," "believe," "forecast," "foresee," "likely," "may," "should," "goal," "target," "might," "will," "could," 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, including, but not limited to:

- structural imbalances in global supply and demand for photovoltaic ("PV") modules;
- the market for renewable energy, including solar energy;
- reduction, elimination or expiration of government subsidies and support programs for solar energy projects;
- our ability to execute on our Long Term Strategic Plan;
- interest rate fluctuations and both our and our customers' ability to secure financing;
- our ability to attract new customers and to develop and maintain existing customer and supplier relationships;
- changes in, or the failure to comply with, government regulations and environmental, health and safety requirements;
- our competitive position and other key competitive factors;
- environmental responsibility, including with respect to cadmium telluride and cadmium sulfide;
- claims under our limited warranty obligations;
- future collection and recycling costs for solar modules covered by our module collection and recycling program;
- our ability to protect our intellectual property;
- our continued investment in research and development;
- the supply and price of components and raw materials, including cadmium telluride;
- our ability to successfully develop and complete our systems business projects;
- our ability to attract and retain key executive officers and associates;
- general economic and business conditions, including those influenced by international and geopolitical events; and
- all other matters discussed in Item 1A: "Risk Factors," and elsewhere in this Annual Report on Form 10-K.

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

PART I

Item 1: Business

Overview

We are a premier global provider of solar energy solutions. We manufacture and sell photovoltaic ("PV") solar modules with an advanced thin-film semiconductor technology, and we design, construct, and sell PV solar power systems that use the solar modules we manufacture. We are the world's largest thin-film PV solar module manufacturer and one of the world's largest PV solar module manufacturers.

In addressing overall global demand for PV solar electricity, we have developed a differentiated, fully integrated systems business that can provide a competitively priced turn-key utility-scale PV system solution for system owners and competitively priced electricity to utility end-users. Our fully integrated systems business, which uses the solar modules we manufacture, has enabled us to increase module throughput, drive cost reduction across the value chain, identify and break constraints to sustainable markets, and deliver compelling solutions to our customers and end-users. With our fully integrated systems business, we believe we are in a position to expand our business in economically sustainable markets (in which support programs are minimal), which are developing in areas with abundant solar resources and sizable electricity demand. We are committed to continually lowering the cost of solar electricity, and in the long term, we plan to compete on an economic basis with conventional fossil-fuel-based peaking power generation.

In furtherance of our goal of delivering affordable solar electricity, we are continually focused on reducing PV solar system costs in four primary areas: module manufacturing, balance of systems ("BoS") costs (consisting of the costs of the components of a solar power system other than the solar modules, such as inverters, mounting hardware, trackers, grid interconnection equipment, wiring and other devices, and installation labor costs), project development costs, and the 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 among the lowest in the world for modules produced on a commercial scale, based on publicly available information. In 2012, our total average manufacturing costs were $0.73 per watt, which is competitive on a comparable basis with those of traditional crystalline silicon solar module manufacturers, based on publicly available information. By continuing to improve conversion efficiency, production line throughput, and lower material costs, we believe that we can further reduce our manufacturing costs per watt and maintain cost competitiveness with traditional crystalline silicon solar module manufacturers. Second, with respect to our BoS cost reduction roadmap, we have aggressive programs which target key improvements in components and system design, which, when combined with continued improvements in conversion efficiency, volume procurement around standardized hardware platforms, use of innovative installation techniques and know how, and accelerated installation times, are expected to result in substantial reductions in our BoS costs resulting in a lower system levelized cost of energy. Third, with respect to our project development costs, we seek optimal site locations in an effort to minimize transmission and permitting costs, and to accelerate lead times to electricity generation. Finally, with respect to the cost of capital, by continuing to demonstrate the financial viability and operational performance of our utility-scale PV solar power plants and increasing our PV solar power system operating experience, we believe we can continue to lower the cost of capital associated with our PV solar power systems, thereby further enhancing the economic viability of our projects and lowering the cost of electricity generated by PV solar power systems that incorporate our modules and technology.

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, accelerate the adoption of our technology in utility-scale PV solar power systems, and identify and remove constraints to the successful migration to sustainable solar markets

around the world. Our vertically integrated capabilities enable us to maximize value and mitigate risk for our customers and thereby deliver meaningful PV energy solutions to varied energy problems worldwide. We offer leadership across the entire solar value chain, resulting in more reliable and cost effective PV energy solutions for our customers, and furthering our mission to create enduring value by enabling a world powered by clean, affordable solar electricity.

Business Segments

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules which convert sunlight into electricity. Third-party customers of our components segment include project developers, system integrators, and operators of renewable energy projects.

Our second segment is our fully integrated systems business (“systems segment”), through which we provide complete turn-key PV solar power systems, or solar solutions that draw upon our capabilities, which include (i) project development, (ii)

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. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems which use our solar modules, and such products and services are sold directly to investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners.

- During project development, we obtain land and land rights for the development of solar power plants incorporating our modules, negotiate long-term power purchase agreements ("PPA") with potential purchasers of the electricity to be generated by those plants or develop plants in regulated markets where feed-in-tariff ("FiT") structures are in place, manage the interconnection and transmission process, negotiate agreements to interconnect the plants to the electric grid, and obtain the permits which are required prior to the construction of the plants, including applicable environmental and land use permits. We may also buy projects in various stages of development and continue developing those projects with system designs incorporating our own modules. We sell developed projects 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 us, to projects developed by independent solar power project developers, and directly to system owners such as utilities. EPC products and services include engineering design and related services, module and BoS procurement, advanced development of grid integration solutions, and construction contracting and management. Depending on the customer and market need, we may provide our full EPC services or any combination of individual products and services within our EPC capabilities. An example of such combination of individual services would be providing engineering design and procurement of BoS parts and modules (EP services) for a third party constructing a PV solar power system.

- We have a comprehensive O&M service offering with more than 17 plants in operation representing more than 800 MW in three countries and a total of 2.2 GW under contract and in construction. Utilizing a state of the art Operations Center, located in Mesa, Arizona, our team of O&M experts provide comprehensive plant services including North America Electric Reliability Corporation ("NERC") compliance, energy forecasting, 24/7 monitoring and control, PPA and Large Generator Interconnection Agreement ("LGIA") compliance, performance engineering analysis, turn-key maintenance services including spare parts and breakdown repair, and environmental services.

- 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 arranging for and structuring financing for projects incorporating our modules including non-recourse project debt financing in the bank loan market and debt capital markets and project equity capital from tax oriented and strategic industry equity investors.

See Note 25. "Segment and Geographical Information," to our consolidated financial statements included in this Annual Report on Form 10-K for further information on our business segments.

Long Term Strategic Plan

In May 2012, we provided information regarding our long term strategic plan ("Long Term Strategic Plan" or "LTSP") to transition to primarily sustainable opportunities by the end of 2016. In executing the LTSP we are focusing on providing solar PV generation solutions using our modules to sustainable geographic markets that we believe have a compelling need for mass-scale PV electricity, including new markets throughout the Americas, Asia, the Middle East, and Africa. As part of our LTSP, we expect to focus on opportunities in which our solar PV generation solutions will compete directly with fossil fuel offerings on a levelized cost of energy basis. Execution of the LTSP will entail a reallocation of resources around the globe, in particular dedicating resources to regions such as Latin America, Asia,

the Middle East, and Africa where we have not traditionally conducted significant business to date. We evaluate and manage closely the appropriate level of resources required as we transition into and penetrate these specific markets. We intend to dedicate significant capital and resources to reduce the total installed cost of solar PV generation, to optimize the design and logistics around our solar PV generation solutions, and to ensure that our solutions integrate well into the overall electricity ecosystem of the specific region.

Components Business

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

Solar Modules

Each solar module is a glass laminate approximately 2ft x 4ft (60cm x 120cm) in size that encapsulates a cadmium telluride ("CdTe") thin-film semiconductor. Our solar modules had an average rated power per module of approximately 86 watts, 80 watts, and 76 watts for 2012, 2011, and 2010, respectively. In December 2012, we announced the release of our most advanced thin-film PV module, the Series 3 FS-392, which is rated at 92.5 watts. Our semiconductor structure is a single-junction polycrystalline thin-film that uses CdTe as the absorption layer and cadmium sulfide as the window layer. CdTe has absorption properties that are highly matched to the solar spectrum and can deliver competitive conversion efficiencies using only about 1-2% of the amount of semiconductor material (i.e., silicon) that is used to manufacture traditional crystalline silicon solar modules. One of the drivers of First Solar modules' performance advantage over crystalline silicon modules is a lower temperature coefficient, delivering higher energy yields at elevated operating temperature typical of utility-scale solar power plants in sunny regions.

Manufacturing Process

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

We have integrated our manufacturing processes into a continuous production line with the following three stages: the deposition stage, the cell definition and treatment stage, and the assembly and test stage. In the deposition stage, panels of transparent oxide coated glass are robotically loaded onto the production line where they are cleaned, heated, and coated with thin layers of cadmium sulfide followed by a layer of CdTe using our proprietary vapor transport deposition technology, after which the semiconductor-coated plates are cooled rapidly to increase strength. In the cell definition and treatment stage, we use high speed lasers to transform the large single semiconductor coating on the glass plate into a series of interconnected cells that deliver the desired current and voltage output. In this stage, we also treat the semiconductor film using proprietary chemistries and processes to improve the device performance, and we apply metal terminated sputtered back contact. Finally, in the assembly and test stage, we apply busbars, inter-laminate material, and a rear glass cover sheet that is laminated to encapsulate the semiconductor. A junction box and termination wires are then applied to complete the assembly. The final assembly stage is the only stage in our production line that requires manual processing.

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

Research, Development, and Engineering

We continue to devote a substantial amount of resources to research and development with the primary objective of lowering the cost of electricity generated by PV systems using our solar modules. We conduct our research and development activities primarily in the United States. Within our components business, we focus our research and development activities on, among other areas, continuing to increase the conversion efficiency of our solar modules and improving manufacturing efficiencies, including throughput improvement, volume ramp, 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, 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 technologies in our efforts to sustain competitive differentiation in our modules. We typically qualify process and product improvements for full production at our Perrysburg, Ohio plant and then use a systematic process to propagate them to our other production lines. We believe that our systematic approach to 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 and, as a result, a process or production improvement on one line can be rapidly deployed to other production lines.

We have recently set a world record for CdTe PV efficiency, achieving research cell efficiency of 18.7 percent. The research cell efficiency was certified at the U.S. Department of Energy’s National Renewable Energy Laboratory. Cell efficiency measures

the proportion of light converted in a single solar cell. Our new record cell was produced using laboratory equipment and methods and is not intended to be representative of our manufacturing capability. We believe that our record cell demonstrates a potential long-term module efficiency entitlement of over 17% using our commercial scale manufacturing equipment.

Customers

With respect to our components business, during 2012, we sold the majority of our solar modules (not included in our systems projects) to solar power system project developers, system integrators, and operators headquartered in Germany, France, India, and the United States, which either resell our solar modules to end-users or integrate them into solar power plants that they own, operate, or sell. Third-party module sales represented approximately 10% of our total 2012 net sales. Additionally, we develop, design, construct and sell PV solar power systems that use the solar modules we manufacture.

As described above under “Business – Long Term Strategic Plan,” we are investing in sustainable market development, particularly in areas with abundant solar resources and sizable electricity demand, including Latin America, Asia, the Middle East, and Africa.

During 2012, NRG Energy, Inc, Exelon Corporation, and MidAmerican Renewables, LLC individually accounted for more than 10% of our components segment’s net sales, which includes the solar modules used in our systems projects. All of the above customers also represented more than 10% of our consolidated net sales. As described above under “Business – Long Term Strategic Plan,” we are seeking to develop additional customer relationships primarily in sustainable markets and regions, which has and is expected to continue to reduce our customer and geographic concentration and dependence.

Competition

The renewable energy, solar energy, and solar module sectors are highly competitive and continually evolving as these sector participants strive to distinguish themselves within their markets and compete within the larger electric power industry. We face intense competition for sales of solar modules, which has and may continue to result in reduced margins and loss of market share. With respect to our components business, our primary sources of competition are currently crystalline silicon solar module manufacturers, as well as other thin-film module manufacturers and companies developing solar thermal and concentrated PV technologies. Certain of our existing or future competitors may be part of larger corporations that have greater financial resources and greater brand name recognition than we do and, as a result, may be better positioned to adapt to changes in the industry or the economy as a whole. Certain competitors may have direct or indirect access to sovereign capital, which could enable such competitors to operate at minimal or negative operating margins for sustained periods of time. Among PV module and cell manufacturers, the principal methods of competition include sales price per watt, conversion efficiency, reliability, warranty terms, and customer payment terms. In 2012, industry average module pricing continued to decline as competitors reduced prices to sell-through inventories worldwide. If competitors reduce module pricing to levels near or below their manufacturing costs, or are able to operate at minimal or negative operating margins for sustained periods of time, our results of operations could be adversely affected. At December 31, 2012, the global PV industry consisted of more than approximately 75 manufacturers of solar modules and cells. In the aggregate, these manufacturers had installed production capacity that significantly exceeded global demand in 2012. We believe this structural imbalance between supply and demand (i.e., where production capacity significantly exceeds current global demand) will continue for the foreseeable future, and we expect that it will continue to put pressure on pricing, which could adversely affect our results of operations.

In addition, we expect to compete with future entrants to the PV 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 PV cells, solar modules, or turn-key production lines.

We also face competition from companies that currently offer or are developing other renewable energy technologies (including wind, hydropower, geothermal, biomass, and tidal technologies) and other power generation sources that burn conventional fossil fuels.

Raw Materials

Our manufacturing process uses approximately 30 types of raw materials and components to construct a complete solar module. One critical raw material in our production process is cadmium telluride. Of the other raw materials and components, the following eight are also critical to our manufacturing process: front glass coated with transparent conductive oxide, cadmium sulfide, photo resist, laminate material, 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 rigorous qualification process. We continually evaluate new suppliers and currently are qualifying several new suppliers and materials. When possible we attempt

to use suppliers that can provide a raw material supply source that is near our manufacturing locations, reducing the cost and lead times for such materials. A few of our critical materials or components are single sourced and most others are supplied by a limited number of suppliers.

Solar Module Collection and Recycling Program

First Solar is committed to extended producer responsibility and takes into account the environmental impact of its products over their entire life cycle. We established the solar industry's first comprehensive module collection and recycling program that is designed to allow our modules, including the glass and encapsulated semiconductor material, to be treated and processed into new modules or other products. 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 under this program can be recycled into materials for use in new products, including new solar modules. End-users with solar modules covered by the program can request collection and recycling of their eligible solar modules by us at any time at no additional cost.

We fund the estimated collection and recycling cost incremental to amounts already pre-funded in prior years for the cumulative modules covered by the program within 90 days of the end of each fiscal year, assuming for this purpose a minimum service life of 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 (with sufficient capacity for manufacturing scrap, anticipated warranty returns, and modules collected at the end of their useful life over the next several years) that produce glass suitable for use in the production of new glass products and unrefined semiconductor materials that will be further processed by a third party supplier and then used to produce semiconductor materials for use in new solar modules.

In the fourth quarter of 2012, we made prospective changes to the program outside the European Union ("EU"). Under this program change, customers, as part of their overall power plant decommissioning obligations, will now be responsible for ensuring modules are either recycled or responsibly disposed of at the end of their useful life. First Solar will offer term-based recycling services to customers at their cost to help them meet these obligations. This change supports our ongoing transition to being a premier provider of adaptable solar energy solutions for our power plant customers.

The European Union's Waste Electronics and Electrical Equipment ("WEEE") Directive places the obligation of recycling (including collection, treatment, and environmentally sound disposal) of electrical and electronic equipment ("EEE") products upon manufacturers. From 2014, this Directive will also be applicable to solar PV modules. For modules sold to and installed in the EU, at this time we will continue to maintain a commitment to cover and pre-fund the estimated collection and recycling costs consistent with our historical program prior to the changes made in the fourth quarter of 2012. Once detailed legal requirements of the transposed WEEE Directive become known in 2013, we will adjust the program in the various EU member states as required and before the WEEE Directive becomes effective in 2014. Additionally, for all modules subject to a sales arrangement prior to the above discussed change, we have an obligation and will maintain the commitment to collect and recycle such covered modules consistent with our historical pre-funded solar module collection and recycling program.

To ensure that the pre-funded amounts for covered modules under the program 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 for qualified collection and recycling costs. These funds cannot be accessed for any purpose other than for qualified module collection and recycling costs of First

Solar modules; such collection and recycling services will either be performed by us or a third party.

Solar Module Warranties

We provide a limited warranty against defects in materials and workmanship under normal use and service conditions for 10 years following delivery to the owners of our solar modules. We also typically warrant to our owners that solar modules installed in accordance with agreed-upon specifications will produce at least 90% of their labeled power output rating during the first 10 years following their installation and at least 80% of their labeled 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 modules or, under the power output warranty, providing additional solar modules to remedy the power shortfall. We also have the option to make a payment for the then current market price for solar modules to resolve claims. Our warranties are automatically transferred from the original purchasers of our solar modules to subsequent purchasers upon resale.

As an alternative to our module power output warranty, we have offered a system level module performance warranty for a

limited number of our recent system sales. This system level module performance warranty is designed for utility scale systems and provides 25-year plant-level energy degradation protection. The system level module performance warranty typically is calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. In resolving claims under the system level module performance warranty to restore the system to warranted performance levels, we first must validate that the root cause is due to module performance, then we typically have the option of either repairing or replacing modules, providing supplemental modules or making a cash payment. Consistent with our module power output warranty, when we elect to satisfy a valid warranty claim by providing replacement or supplement modules under the system level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

From time to time we have taken remediation actions in respect of affected modules beyond our limited warranty, and we may elect to do so in the future, in which case we would incur additional expenses. Such potential voluntary future remediation actions beyond our limited warranty obligation could have a material adverse effect on our results of operations if we commit to any such remediation actions.

Systems Business

Through our fully integrated systems business, we provide a complete turn-key solar power system solution or any combination of our systems solutions, which may include project development, EPC services, O&M services, and project finance.

Our systems business has grown over the past several years through a combination of business acquisitions and organic growth. In April 2009, we completed the acquisition of the project development business of OptiSolar Inc., which included a multi-gigawatt project pipeline. In July 2010, we completed the acquisition of NextLight Renewable Power, LLC ("NextLight"), a leading developer of utility-scale solar projects in the southwestern United States, which also included a multi-gigawatt project pipeline.

Project Development

Our systems business is primarily dependent upon successful completion of project development activities including: site selection and securing rights to acquire or use the site, obtaining in a timely manner the requisite interconnection and transmission studies, executing an interconnection agreement, obtaining 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. Depending on the market opportunity or geographic location, we may acquire projects in various stages of development or acquire project companies from developers in order to complete the development process, construct a PV power plant incorporating our modules and sell the system to a long-term project owner. Depending on the market opportunity or geographic location, we may collaborate with local partners in connection with these project development activities. PPAs or FiT structures define the price and terms the utility customer or investor will pay for power produced from a project. Entering into a PPA generally provides the underlying economics needed to finalize development including permitting, beginning construction, arranging the financing, and marketing the project for sale to a long-term project owner. Depending primarily on the location, stage of development upon our acquisition of the project, and other site attributes, the development cycle typically ranges from one to five years. We may be required to incur significant costs for preliminary engineering, permitting, legal, and other expenses before we can determine whether a project is feasible, economically attractive, or capable of being built. If there is a delay in obtaining any required regulatory approvals, we may be forced to incur additional costs, write-down capitalized project assets, and the right of the off-taker under the PPA to terminate may be triggered.

Our systems business' current and planned activities are focused on markets around the world, primarily in sustainable markets.

In North America, our projects currently account for substantially all of the 2.9 GW AC advanced stage pipeline of projects that we are either currently constructing or expect to construct. We are also developing other projects in North America that do not yet have PPAs. See Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations – Financial Operations Overview – Net Sales – Systems Business," for a listing of these projects.

In Europe, we have been engaged in project development activities with respect to certain projects in Germany and we are actively evaluating additional project opportunities in Turkey and emerging Eastern European markets as well as mature Western European solar markets.

In Asia (including India, China and Southeast Asia), Latin America, the Middle East and Africa, we have been actively pursuing opportunities to offer a complete turn-key solar power solution or any combination of our PV systems solutions. We

expect our focus on, and investment in, these markets will continue to increase as we execute our Long Term Strategic Plan.

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 may purchase from us completed solar power plants (which include our solar modules), any combination of EPC services, and O&M services for the plants we build. During 2012, the substantial majority of our systems business sales were generated in North America.

During 2012, the principal customers of our systems segment were NRG Energy, Inc, Exelon Corporation, and MidAmerican Renewables, LLC, each of which also accounted for more than 10% of our total net sales during 2012.

Competition

With respect to our systems business, we face competition from other providers of renewable energy solutions, including developers of PV, solar thermal and concentrated solar power systems, and developers of other forms of renewable energy projects, including wind, hydropower, geothermal, biomass, and tidal. To the extent other solar module manufacturers become more vertically integrated, we expect to face increased competition from such companies as well. We also face competition from other EPC companies and joint venture type arrangements between EPC companies and solar companies. While the decline in PV modules prices over the last several years has increased interest in solar electricity worldwide, competition at the systems level can be intense, thereby exerting downward pressure on systems level profit margins industry-wide, to the extent competitors are willing and able to bid aggressively low prices for new projects and PPAs, using low cost assumptions for modules, BoS components, installation, maintenance and other costs. Please see Item 1A: “Risk Factors - Competition at the systems level can be intense, depending on the market opportunity, thereby potentially exerting downward pressure on systems level profit margins industry-wide, which could reduce our net sales, profitability and adversely affect our results of operations.”

EPC Warranty

In addition to our solar module warranties described above, for solar power plants built by our systems business, we typically provide a limited warranty on the balance of the system against defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a phase or the entire solar power plant. In resolving claims under the engineering design, installation, and workmanship warranties, we have the option of remedying the defect through repair, or replacement.

Research, Development, and Engineering

Our systems business research and development activities are primarily focused on the objective of lowering the levelized cost of energy through reductions in BoS costs, improved systems design, and energy yield enhancements associated with PV systems that use our solar modules. We conduct our research and development activities for the systems business primarily in the United States. Innovations related to system design, hardware platforms, inverters, trackers, and installation techniques and know how, among other things, can and are expected in the future to continue to reduce BoS costs, which can represent a significant portion of the costs associated with the construction of a typical utility-scale PV solar power system.

Support Programs

Support programs for PV solar electricity generation, depending on the jurisdiction, include feed-in tariffs ("FiTs"), quotas (including renewable portfolio standards and tendering systems), and net energy metering programs. In addition to these, financial incentives for PV solar electricity generation include tax incentives, grants, loans, rebates, and production incentives. Although we expect to become less impacted by, and less dependent on, support programs as we execute our Long Term Strategic Plan and transition into primarily sustainable markets, support programs will continue to play varying roles in accelerating the adoption of PV solar systems around the world.

Under a basic FiT program, producers of renewable energy are paid a set rate for their electricity, usually differentiated according to the technology used and size of the installation. For PV solar, the rate has historically been set above market rates and is fixed for a period of up to 25 years. In most countries with FiTs, grid operators are obliged to provide priority and guaranteed access to the grid for renewable energy installations. The additional costs of these schemes are generally passed through to the electricity consumers by way of a premium on the kilowatt hour ("kWh") end-user price. These FiT 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. Prior to 2011, the substantial majority of our module

sales had been for grid-connected ground or commercial roof mounted solar power systems in Germany and other European Union countries with FiT subsidies.

Whereas FiT laws set the price and let the market determine capacity and generation, quota systems work in reverse. In general, governments mandate a minimum share of capacity or (grid-connected) generation of electricity to come from renewable energy sources. This share often increases over time, with a specific final target and end-date. The mandate can be placed on producers, distributors, or consumers.

There are two main types of quota systems used: obligation/certificate and tendering systems. A renewable portfolio standard ("RPS") is in the former category. Under an RPS, regulated utilities and other load serving entities are required to procure a specified percentage of their total electricity sales to end-user customers from eligible renewable resources, such as solar generating facilities, by a specified date. Some programs may further require that a specified portion of the total percentage of renewable energy must come from solar generating facilities. The majority of states in the U.S. have enacted legislation adopting RPS mechanisms. RPS legislation and implementing regulations vary significantly from state to state, particularly with respect to the percentage of renewable energy required to achieve the state's RPS mandate, the definition of eligible renewable energy resources, and the extent to which renewable energy credits (certificates representing the generation of renewable energy) qualify for RPS compliance. Measured in terms of the volume of renewable electricity required to meet its RPS mandate, California's RPS program is the most significant in the U.S., and the California market for renewable energy dominates the western U.S. region. First enacted in 2002, California's RPS statute has been amended several times to increase the overall percentage requirement as well as to accelerate the target date for program compliance. Pursuant to amendments enacted by the California Legislature in 2011, the California RPS program now requires obligated load serving entities to procure 33% of their retail electricity demand from eligible renewable resources by 2020. In 2012, approximately 56% of our total net sales were derived from our systems projects or third-party module sales to solar power systems in California.

In contrast to an RPS system, tendering systems of procurement (such as those used in South Africa and India) are focused on specific targets for new capacity. In South Africa, for example, the government is procuring bids under a competitive tender with solicitation dates spread over about two years. The request for proposal ("RFP") is the first major solicitation in support of a target of over 17 GW of renewable energy by 2030 in South Africa's Integrated Resource Plan of which over 8 GW was allocated to PV solar. Project proponents bid competitively at each solicitation date until all the capacity has been allocated. The tender solicitation approach allows governments or utilities to proscribe project construction time frames to achieve specific generation targets for the electricity system.

Net energy metering programs enable end-users to install renewable systems and to offset their retail energy consumption with production from on-site facilities and, in some cases, to sell excess solar electricity to their retail electricity provider. Because the bundled cost of retail electricity usually exceeds the cost of unbundled electricity, net energy metering programs provide an incentive to the end-user. The policies governing net energy metering vary by jurisdiction and utility. Some utilities pay the end-user in advance, while others credit the end-user's bill.

Tax incentive programs exist in the U.S. at both the federal and state level and can take the form of investment and production tax credits, accelerated depreciation and sales and property tax exemptions. 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 U.S. 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 Europe, renewable energy targets, in conjunction with FiTs, 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") 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 replaced 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 clear pathways for the development of renewable energy sources.

Germany, which accounted for approximately 3% of our 2012 net sales, is expected to continue to be a small percentage of our net sales due to changes in policy support and demand. In the context of the discussion on Germany's energy strategy "Energiewende," the German government made significant changes in 2012 to the German Renewable Energy Law, or the EEG. These changes, which began to take effect in the second half of 2012, included significant and accelerated FiT reductions for

projects up to 10 MW and an elimination by the end of 2012 of FiTs for projects over 10 MW. These FiT changes particularly impact the competitiveness in Germany of our core offering of large-scale free field PV systems.
In Australia, which accounted for 1% of our 2012 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 federal government's national Renewable Energy Target which has set a renewable energy goal of 20% by 2020.
In India, which accounted for 2% of our 2012 net sales, the National Solar Mission includes a goal of installing 22 GW of solar power generation capability by 2022. India also announced a FiT policy for the first phase of the National Solar Mission in 2010. There have been significant achievements during the Phase I of the National Solar Mission, and several projects have been awarded PPAs under various state programs as of December 2012. In December 2012 the Ministry for New & Renewable Energy released the draft policy for Phase II of the National Solar Mission, which mentions installation of approximately 10 GW of utility scale and 1 GW of off-grid solar power projects by the end of Phase II (2013-2017).
In China, governmental authorities recently adopted a national FiT policy for large scale projects. China also expanded the Golden Sun Program, an upfront cost subsidy program, aimed primarily at distributed generation. In addition, according to the current draft of the 12th 5-year plan for solar energy, the government intends to raise the 2015 goal for total cumulative solar energy capacity from 15 GW to 21 GW, which was subsequently revised to 40 GW.
In the Middle East and North Africa ("MENA"), several countries have announced sizeable solar targets, although policy mechanisms are in many cases not yet firmly established. In the Kingdom of Saudi Arabia, a solar policy with a target of 41 GW of solar energy (of which at least 16 GWs is PV) by 2030 was introduced in 2012. The selection of a market mechanism enabling the deployment of solar power plants is expected in 2013. While the expected potential of the MENA markets is significant, policy promulgation and market development are especially vulnerable to governmental inertia, political instability, geopolitical risk, fossil fuel subsidization, potentially stringent localization requirements and limited available infrastructure.
For more information about risks related to support programs and related 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 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."
Intellectual Property

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

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

sensitive aspects of our modules, technology, or business plans.

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

Environmental, Health, and Safety Matters

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

substantial costs, including cleanup costs, fines, and civil or criminal sanctions and costs arising from third party property damage or personal injury claims as a result of violations of, or liabilities under, environmental and occupational health and safety laws and regulations or non-compliance with environmental permits required for our operations. We believe we are currently in substantial compliance with applicable environmental and occupational health and safety requirements and do not expect to incur material expenditures for environmental and occupational health and safety controls in the foreseeable future. However, future developments such as the implementation of new, more stringent laws and regulations, more aggressive enforcement policies, or the discovery of unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations, 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 December 31, 2012, we had approximately 5,600 associates (our term for full- and part-time employees), including approximately 4,400 in module manufacturing positions and approximately 400 associates that work directly in our systems business. The remainder of our associates are in research and development, sales and marketing, and general and administrative positions. None of our associates are currently represented by labor unions or covered by a collective bargaining agreement. As we expand domestically and internationally, however, we may encounter either regional laws that mandate union representation or associates who desire union representation or a collective bargaining agreement. We believe that our relations with our associates are good.

Information About Geographic Areas

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

In 2012, the foreign country that included concentration risk in excess of 10% of consolidated net sales was Canada. As part of our Long Term Strategic Plan, we are in the process of expanding our operations, particularly with respect to our systems business, to various countries worldwide, including countries in Latin America, Asia, the Middle East and Africa. As a result, we are subject to the legal, tax, political, social and regulatory requirements, and economic conditions of an increasing number of jurisdictions. The international nature of our operations subjects us to a number of risks, including fluctuations in exchange rates, adverse changes in foreign laws or regulatory requirements and tariffs, taxes, and other trade restrictions. See Item 1A: “Risk Factors — Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in foreign countries.” and “Risk Factors — We may be unable to execute on our Long Term Strategic Plan, which could have a material adverse effect on our business, results of operations or financial condition.” See Note 25. “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 31, 2012, December 31, 2011, and December 31, 2010. 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 27, 2013, were as follows:

Name	Age	Position
James A. Hughes	50	Chief Executive Officer
Mark R. Widmar	47	Chief Financial Officer and Chief Accounting Officer
Georges J. Antoun	50	Chief Operating Officer
Raffi Garabedian	46	Chief Technology Officer
James G. Brown, Jr.	50	Executive Vice President, Global Business Development
Mary Beth Gustafsson	53	Executive Vice President, General Counsel and Secretary
Carol Campbell	61	Executive Vice President, Human Resources
Maja Wessels	53	Executive Vice President, Global Public Affairs

James A. Hughes joined First Solar in March 2012 as Chief Commercial Officer and was appointed Chief Executive Officer in May 2012. Prior to joining First Solar, Mr. Hughes served, from October 2007 until April 2011, as Chief Executive Officer and Director of AEI Services LLC, which owned and operated power distribution, power generation (both thermal and renewable), natural gas transportation and services, and natural gas distribution businesses in emerging markets worldwide. From 2004 to 2007, he engaged in principal investing with a privately held company based in Houston, Texas that focused on micro-cap investments in North American distressed manufacturing assets. Previously, he served, from 2002 until March 2004, as President and Chief Operating Officer of Prisma Energy International, which was formed out of former Enron interests in international electric and natural gas utilities. Prior to that role, Mr. Hughes spent almost a decade with Enron Corporation in positions that included President and Chief Operating Officer of Enron Global Assets, President and Chief Operating Officer of Enron Asia, Pacific Africa and China and as Assistant General Counsel of Enron International. Mr. Hughes is a Non-Executive Director of APR Energy plc, a London Stock Exchange-listed energy company participating in the global market for gas and diesel fired temporary power plants. Mr. Hughes holds a juris doctor degree from the University of Texas at Austin School of Law, a Certificate of Completion in international business law from Queen Mary's College, University of London, and a bachelor's degree in business administration from Southern Methodist University.

Mark R. Widmar joined First Solar in April 2011 as Chief Financial Officer. Mr. Widmar has also served as First Solar's Chief Accounting Officer since February 1, 2012. Prior to joining First Solar, Mr. Widmar served as Chief Financial Officer of GrafTech International Ltd., a leading global manufacturer of advanced carbon and graphite materials, from May 2006 through March 2011, as well as President, Engineered Solutions from January 2011 through March 2011. Prior to joining GrafTech, Mr. Widmar served as Corporate Controller of NCR Inc. from 2005 to 2006, and was a Business Unit Chief Financial Officer for NCR from November 2002 to his appointment as Controller. He also served as a Division Controller at Dell, Inc. from August 2000 to November 2002 prior to joining NCR. Mr. Widmar also held various financial and managerial positions with Lucent Technologies Inc., Allied Signal, Inc., and Bristol Myers/Squibb, Inc. Mr. Widmar holds a B.S. in Business Accounting and a Masters of Business Administration from Indiana University.

Georges J. Antoun joined First Solar in July 2012 as the company's Chief Operating Officer. Mr. Antoun has over 20 years of operational and technical experience, including leadership positions at several global technology companies. Mr. Antoun most recently served as Venture Partner at Technology Crossover Ventures ("TCV"), a private equity and venture firm that he joined in July 2011. Prior to joining TCV, Mr. Antoun was the Head of Product Area IP & Broadband Networks for Ericsson, based in San Jose, California. Mr. Antoun joined Ericsson in 2007, when Ericsson

acquired Redback Networks, a telecommunications equipment company, where Mr. Antoun served as the Senior Vice President of World Wide Sales & Operations. After the acquisition, Mr. Antoun was promoted to Chief Executive Officer of the Redback Networks subsidiary. Prior to Redback Networks, Mr. Antoun spent five years at Cisco Systems, where he served as Vice President of Worldwide Systems Engineering and Field Marketing, Vice President of Worldwide Optical Operations, and Vice President of Carrier Sales. He has also held senior management positions at Newbridge Networks, a data and voice networking company, and Nynex (now Verizon Communications), where he was part of its Science and Technology Division. Mr. Antoun earned a Bachelor of Science degree in Engineering from the University of Louisiana at Lafayette and a Master's degree in Information Systems Engineering from Polytechnic Institute of New York University.

Raffi Garabedian was appointed Chief Technology Officer in May 2012. Mr. Garabedian joined First Solar in 2008 as Director

of Disruptive Technologies, and was promoted to Vice President of Advanced Technologies in 2010, overseeing the Company's advanced research and development operations in Santa Clara, California. Prior to joining First Solar, he was founder and CEO of Touchdown Technologies, a semiconductor test equipment company. Prior to that, Mr. Garabedian worked in the semiconductor and microelectromechanical systems industries for over 15 years, developing new products ranging from automotive sensors to telecommunications switching systems, and holds more than 20 issued patents in these fields. Mr. Garabedian earned a BSEE degree from Rensselaer Polytechnic University and an MSEE degree from the University of California at Davis.

James G. Brown, Jr. was appointed Executive Vice President, Global Business Development in March 2012. Prior to holding this position, Mr. Brown served as President, Utility Systems Business Group and President, Global Business Development. Mr. Brown joined First Solar in 2008 as Vice President, Project Finance, and has been involved in project finance and business development during his tenure. Prior to joining First Solar, Mr. Brown worked for 19 years in project and structured finance at Chase Manhattan, Société Générale, WestLB and HSBC, specializing in the power, oil and gas, petrochemical and general industrial sectors. Before that, Mr. Brown was a Captain in the U.S. Army where he was a helicopter pilot and commanded an Air Cavalry Troop. He earned a B.S. degree in Engineering from the United States Military Academy at West Point.

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

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.

Maja Wessels joined First Solar in May 2008 as Vice President of Government Affairs for the Europe, Middle East and Africa region and was named Executive Vice President, Global Public Affairs in May 2009. Prior to joining First Solar, Ms. Wessels served four years as senior vice president, Government Affairs at Honeywell for the EMEA region and three years as President, United Technologies International Operations for Europe. Ms. Wessels chaired the American Electronics Industry Association Europe from 2006 to 2007, and prior to that she was president of the American Chamber of Commerce to the EU from 2003 to 2007. From 1997 to 2000 she was employed by Daimler Chrysler as vice president of Government Affairs in Europe. Ms. Wessels holds a B.A. from Dartmouth College and a master's degree in international economics and European studies from the School of Advanced International Studies of Johns Hopkins 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

An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition and results of operations

Solar manufacturers had installed production capacity that significantly exceeded global demand in 2012. We believe this structural imbalance between supply and demand (i.e., where production capacity significantly exceeds current global demand) will continue for the foreseeable future, and we expect that it will continue to put pressure on pricing. In light of the increase in global production capacity, we engaged in a series of restructuring initiatives in 2012 to better align production with expected

market demand including the closure of our German manufacturing operations in 2012. In 2012, industry average sales prices per watt ("ASPs") continued to decline, as competitors reduced ASPs to sell-through inventories worldwide. If our competitors reduce module pricing to levels near or below their manufacturing costs, or are able to operate at minimal or negative operating margins for sustained periods of time, or if demand for PV modules does not grow sufficiently to justify the current production supply, our business, financial condition and results of operations could be adversely affected.

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

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

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

Additionally, large-scale solar systems are still in their relatively early stages of existence, and, depending on the geographic area, many potential customers are still in the process of educating themselves about the points of differentiation among various available providers of PV solar solutions, including a company's proven overall experience and bankability, system design & optimization expertise, grid interconnection and stabilization expertise, and proven O&M capabilities. If we are unable over time to meaningfully differentiate our offerings at scale, from the viewpoint of our potential customer base, our business, financial condition and results of operations could be adversely affected.

If PV technology is not suitable for widespread adoption at economically attractive rates of return, or if sufficient additional 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, in comparison to fossil fuel-based electricity generation. If PV technology proves unsuitable for widespread adoption at economically attractive rates of return or if additional demand for solar modules and systems fails to develop sufficiently or takes longer to develop than we anticipate, we may be unable to grow our business or generate sufficient net sales to sustain profitability. In addition,

demand for solar modules and systems in our targeted markets, including North America, Latin America, Europe, India, China, the Middle East, Australia, South Africa and other foreign jurisdictions, may develop to a lesser extent than we anticipate. Many factors may affect the viability of widespread adoption of PV technology and demand for solar modules and systems, including the following:

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

- performance, reliability and availability of energy generated by PV systems 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 PV, 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 natural gas, coal, oil, and other fossil fuels;

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

- availability, substance, and magnitude of support programs including government targets, subsidies, incentives, and renewable portfolio standards to accelerate the development of the solar energy industry.

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

Although our Long Term Strategic Plan provides for First Solar to transition over time toward operating in sustainable markets, in the near-term our net sales and profits remain subject to variability based on the availability and size of government subsidies and economic incentives (support programs). Federal, state, and local governmental bodies in many countries have provided subsidies in the form of FiTs, rebates, tax incentives, and other incentives to end-users, distributors, systems integrators, and manufacturers of PV products. Many of these support programs expire, phase out over time, require renewal by the applicable authority, or may be amended. A summary of recent developments in the major government support programs that can impact our business appears under Item 1: “Business – Support Programs.” To the extent these support programs are reduced earlier than previously expected, or free-field or conversion land applications are disadvantaged, such changes could reduce demand and/or price levels for our solar modules and systems, lead to a reduction in our net sales, and adversely impact our operating results.

Germany, which accounted for approximately 3% of our 2012 net sales, is expected to continue to be a small percentage of our net sales due to changing levels of policy support and demand. In the context of the discussion on Germany’s energy strategy “Energiewende”, the German government made significant changes in 2012 to the German Renewable Energy Law, or the EEG. These changes, which began to take effect in the second half of 2012, included significant and accelerated FiT reductions for projects up to 10 MW and an elimination by the end of 2012 of FiTs for projects over 10 MW. These FiT changes particularly impact the competitiveness in Germany of our core offering of large-scale free field PV systems.

In the Middle East and North Africa (“MENA”), several countries have announced sizeable solar targets, although policy mechanisms in many cases are not yet firmly established. In the Kingdom of Saudi Arabia, a solar policy with a target of 41 GW of solar energy (of which at least 16 GWs is PV) by 2030 was introduced in 2012. The selection of a market mechanism enabling the deployment of solar power plants is expected in 2013. While the expected potential of the MENA markets is significant, policy promulgation and market development are especially vulnerable to governmental inertia, political instability, geopolitical risk, fossil fuel subsidization, potentially stringent localization requirements and limited available infrastructure.

Reduced growth in or the reduction, elimination, or expiration of support programs for on-grid solar electricity applications could reduce demand and/or price levels for our solar modules and systems, and limit our growth or lead to a reduction in our net sales, and adversely impact our operating results.

Our ability to pursue an expansion strategy in India could be adversely affected by protectionist or other adverse public policies.

Under Phase I of the National Solar Mission, India required developers of solar PV projects employing crystalline silicon technology to use solar cells and modules manufactured in India. In its draft policy for Phase II of the National Solar Mission, India has stated that it is considering imposing similar local content requirements (“LCRs”) on thin film solar technologies (such as First Solar modules), which currently comprise the majority of U.S. solar exports to India. In February 2013, the United States Government announced that it had requested World Trade Organization dispute

settlement consultations with the Government of India concerning Phase I local content requirements. In the event India expands its LCRs for the National Solar Mission to include thin-film modules, our ability to participate in the National Solar Mission will be substantially reduced and possibly completely eliminated, and thus our ability to pursue an expansion strategy in India would be adversely affected.

In addition, First Solar has received official notice from the Indian government that India is investigating potential dumping of solar cells and modules from the U.S., Malaysia, Taiwan and China. First Solar is cooperating with the Indian Government and responding to its questionnaire. We expect a final decision by the end of 2014, although a preliminary determination is likely to be made during the course of 2013. If we are deemed to have dumped our modules in India to the detriment of the domestic industry, we could be assessed anti-dumping duties and our ability to pursue an expansion strategy in India could be adversely affected.

We could be adversely affected by any violations of the U.S. Foreign Corrupt Practices Act ("FCPA") and foreign anti-bribery laws.

The FCPA generally prohibits companies and their intermediaries from making improper payments to non-U.S. government officials for the purpose of obtaining or retaining business. Other countries in which we operate also have anti-bribery laws, some of which prohibit improper payments to government and non-government persons and entities. Our policies mandate compliance with these anti-bribery laws. We currently operate in, and pursuant to our Long Term Strategic Plan intend to further expand into, many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. In addition, due to the level of regulation in our industry, our entry into certain jurisdictions, including India, China, and the Middle East, requires substantial government contact where norms can differ from U.S. standards. Although we implement policies and procedures designed to facilitate compliance with these anti-bribery laws, our employees, subcontractors and agents may take actions in violation of our policies and anti-bribery laws. Any such violation, even if prohibited by our policies, could subject us to criminal or civil penalties or other sanctions, which could have a material adverse effect on our business, financial condition, cash flows and reputation.

We may be unable to fully execute on our Long Term Strategic Plan, which could have a material adverse effect on our business, results of operations or financial condition.

We face numerous difficulties in executing our Long Term Strategic Plan, particularly in new foreign jurisdictions, including the following:

- difficulty in accurately prioritizing geographic markets which we can most effectively and profitably serve with our utility scale PV offerings, including miscalculations in overestimating or underestimating our addressable market demand;
- difficulty in overcoming the inertia involved in changing local electricity ecosystems as necessary to accommodate large-scale PV solar deployment and integration;
- protectionist or other adverse public policies in countries we operate in and/or are pursuing, including local content requirements or capital investment requirements;
- difficulty in timely identifying, attracting and retaining qualified sales, technical and other personnel in geographies targeted for expansion;
- the possibility of having insufficient capital resources necessary to achieve an effective localized business presence in targeted jurisdictions;
- difficulty in competing against competitors who may have greater financial resources and/or a more effective or established localized business presence and/or be willing and able to operate with little or no operating margins for sustained periods of time;
- difficulty in competing against competitors who may gain in profitability and financial strength over time by successfully participating in the global rooftop PV solar market, which is a segment we have de-emphasized as part of our Long Term Strategic Plan;
- difficulty in developing any necessary partnerships with local businesses, on commercially acceptable terms; and

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

In addition, please see the Risk Factors entitled “Our substantial international operations subject us to a number of risks, including unfavorable political, regulatory, labor, and tax conditions in foreign countries,” and “Reduced growth in or the reduction, elimination, or expiration of government subsidiaries, economic incentives, and other support for on-grid solar electricity, 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.”

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 customers to finance the cost of a PV system and could reduce the demand for our solar systems or modules and/or lead to a reduction in the average selling price for PV modules.

Many of our customers and our systems business depend on debt and/or equity financing to fund the initial capital expenditure required to develop, build and purchase a PV system. As a result, an increase in interest rates or lending rates, or a reduction in the supply of project debt financing or tax equity investments, could reduce the number of solar projects that receive financing or otherwise make it difficult for our customers or our systems business to secure the financing necessary to develop, build, purchase or install a PV system on favorable terms, or at all, and thus lower demand for our solar modules which could limit our growth or reduce our net sales. In addition, we believe that a significant percentage of our end-users install 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.

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 PV 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 PV products and investment in the research and development of PV technology. For example, without a mandated regulatory exception for PV 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 of using PV systems to our end-users, which could make them less desirable, thereby adversely affecting our business, prospects, results of operations, and financial condition. In addition, with respect to utilities that utilize a peak hour pricing policy or time-of-use pricing methods whereby the price of electricity is adjusted based on electricity supply and demand, electricity generated by PV systems currently benefits from competing primarily with expensive peak hour electricity, rather than the less expensive average price of electricity. Modifications to the peak hour pricing policies of utilities, such as to a flat rate for all times of the day, would require PV systems to achieve lower prices in order to compete with the price of electricity from other sources.

We anticipate that our solar systems and modules 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 other matters. It is a complex task to track the requirements of individual jurisdictions 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 or our customers and, as a result, could cause a significant reduction in demand for our solar systems and 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 levels. These environmental laws and regulations include those governing the discharge of pollutants into the air and water, the use, management, and disposal of hazardous materials and wastes, the cleanup of contaminated sites, and occupational health and safety. As we execute our Long Term Strategic Plan and expand our business into foreign jurisdictions worldwide, our environmental compliance burden will continue to increase both in terms of magnitude

and complexity. 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. Such solutions could also result in substantial delay or termination of projects under construction within our systems business, which could adversely impact our results of operations. While we believe we are currently in substantial compliance with applicable environmental requirements, future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations, or the discovery of presently unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations, and financial condition.

In addition, our solar modules contain cadmium telluride and cadmium sulfide. Elemental cadmium and certain of its compounds are regulated as hazardous materials due to the adverse health effects that may arise from human exposure. Based on existing research, the risks of exposure to cadmium telluride are not believed to be as serious as those relating to exposure to elemental cadmium. In our manufacturing operations, we maintain engineering controls to minimize our associates' exposure to cadmium or cadmium compounds and require our associates who handle cadmium compounds to follow certain safety procedures,

including the use of personal protective equipment such as respirators, chemical goggles, and protective clothing. Relevant studies and third party peer review of our technology have concluded that the risk of exposure to cadmium or cadmium compounds from our end-products is negligible. In addition, the risk of exposure is further minimized by the encapsulated nature of these materials in our products and the physical properties of cadmium compounds used in our products and the recycling or responsible disposal of First Solar's modules. While we believe that these factors and procedures are sufficient to protect our associates, end-users, and the general public from adverse health effects that may arise from cadmium exposure, we cannot ensure that human or environmental exposure to cadmium or cadmium compounds used in our products will not occur. Any such exposure could result in future third party claims against us, 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 subject to governmental regulation in several countries. More restrictive regulation in this area and/or expansion of such regulation to additional countries 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.

Risks Related to our Operations, Manufacturing, and Technology

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

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

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

The solar energy and renewable energy industries are 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 PV industry, we face competition from crystalline silicon solar module manufacturers, other thin-film solar module manufacturers and companies developing solar thermal and concentrated PV technologies. Existing or future solar manufacturers might be acquired by larger companies with significant capital resources, thereby intensifying competition with us. In addition, the introduction of a low cost disruptive technology could adversely affect our ability to compete, which could reduce our net sales and adversely affect our results of operations.

Even if demand for solar modules continues to grow, the rapid manufacturing capacity expansion undertaken by many solar module manufacturers, particularly manufacturers of crystalline silicon solar modules, has created and may continue to cause periods of structural imbalance during which supply exceeds demand. See "An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition and results of operations." In addition, we believe a significant decrease in the cost of silicon feedstock would provide further

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

During any such period, our competitors could decide to reduce their sales prices in response to competition, even below their manufacturing costs, in order to generate sales. Other competitors may have direct or indirect access to sovereign capital, which could enable such competitors to operate at minimal or negative operating margins for sustained periods of time. As a result, we may be unable to sell our solar modules 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 and systems may perform below expectations; problems with product quality or performance may cause us to incur significant and/or unexpected warranty and related expenses, damage our market reputation, and prevent us from maintaining or increasing our market share.

Researchers began developing thin-film semiconductor technology over 25 years ago, but were unable to integrate the

technology into a solar module production line until about a decade ago. We perform a variety of quality and life tests under different conditions upon which we base our assessments and warranty of product performance over its expected useful life. However, if our thin-film technology and solar modules perform below expectations, we could lose customers and face substantial warranty expense.

We provide a limited warranty against defects in materials and workmanship under normal use and service conditions for 10 years following delivery to the owners of our solar modules. We also typically warrant to our owners that solar modules installed in accordance with agreed-upon specifications will produce at least 90% of their labeled power output rating during the first 10 years following their installation and at least 80% of their labeled power output rating during the following 15 years. As a result, we bear the risk of extensive warranty claims long after we have sold our solar modules and recognized net sales. As an alternative to our module power output warranty, we have offered a system level module performance warranty for a limited number of our recent sales. As of December 31, 2012, our accrued warranty liability was $191.6 million, of which, $90.6 million was classified as current and $101.0 million was classified as noncurrent.

We have historically estimated our product warranty liability for power output and defects in materials and workmanship under normal use and service conditions to have an estimated warranty return rate of approximately 3% of modules covered under warranty. A 1 percentage point change in the estimated warranty return rate would change our estimated product warranty liability by approximately $46 million.

During the period from June 2008 to June 2009, a manufacturing excursion occurred whereby certain modules manufactured during that time period may experience premature power loss once installed in the field. We initiated a voluntary remediation program beyond our standard warranty pursuant to which we made commitments to customers with systems containing modules affected by the manufacturing excursion that we would cover certain costs of remediation efforts. We have expensed $271.2 million total to-date for the estimated costs of remediating systems affected by modules manufactured during the relevant period.

If any of our assumptions used in estimating the above referenced warranty or manufacturing excursion costs prove incorrect, we could be required to accrue additional expenses, which could adversely impact our financial position, operating results and cash flows. Although we believe we have taken corrective actions to avoid similar manufacturing excursions in the future, we cannot guarantee that our internal quality and testing programs will prevent a future manufacturing excursion from occurring. Any future manufacturing excursions including any commitments made by us to take remediation actions in respect of affected modules beyond our limited warranty could adversely impact our financial position, operating results and cash flows.

Although 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. As a result, our warranty is based on a variety of quality and life tests that enable fact-based predictions of durability and future performance. These predictions, however, could prove to be materially different from the actual performance over the full life 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, corrode, or experience power degradation in excess of expectations, and our manufacturing operations or supply chain could be subject to process variations that could cause affected modules to underperform compared to our expectations. These risks could be amplified as we implement design and process changes in connection with our efforts to improve our product, accelerate module conversion efficiency and manufacturing production throughput improvements as part of our Long Term Strategic Plan. In addition, as we increase the number of installations in non-temperate climates, in accordance with our Long Term Strategic Plan, we may experience increased failure rates due to deployment into such climates. Any widespread product failures may damage our market reputation, cause our sales to decline, require us to repair or replace the defective modules, and cause us to take voluntary remedial measures beyond warranty terms to enhance customer

satisfaction, which could have a material adverse effect on our financial results.

In addition to our solar module warranty described above, for solar power plants built by our systems business, we typically provide a limited warranty on the balance of the system against defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a phase or the entire solar power plant. Any widespread failures of solar power plants built by us could result in significant increases to warranty expense, damage our market reputation, cause our sales to decline, cause us to incur unexpected costs to remedy defects or otherwise negatively affect our results of operations.

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

We have historically pre-funded, and will continue to pre-fund in certain jurisdictions, our estimated future obligation for collecting and recycling solar modules covered by our collection and recycling program based on the present value of the expected future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging the solar modules for

transport, the cost of freight from the solar module installation sites to a recycling center, the material, labor, capital costs and scale of recycling centers, and an estimated third-party profit margin and return on risk for collection and recycling services. We base 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 are expected to be collected and recycled. If our estimates prove incorrect, we could be required to accrue additional expenses at and from the time we realize our estimates are incorrect and could also face a significant unplanned cash burden at the time we realize our estimates are incorrect or end-users return their solar modules, which could harm our operating results. In addition, participating end-users can return their solar modules covered under the collection and recycling program at any time. As a result, we could be required to collect and recycle covered solar modules earlier than we expect.

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

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

In addition, we often forward price our products and services in anticipation of future cost reductions and technology improvements, and thus an inability to further refine our technology and execute our conversion efficiency roadmap and our long-term manufacturing cost, BoS cost and LCOE 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. We regularly file patent applications to protect inventions arising from our research and development, and are currently pursuing such patent applications in the U.S. and worldwide. Our existing patents and future patents could be challenged, invalidated, circumvented, or rendered unenforceable. Our pending patent applications may not result in issued patents, or if patents are issued to us, such patents may not be sufficient to provide meaningful protection against competitors or against competitive technologies.

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

Third parties may infringe or misappropriate our proprietary technologies or other intellectual property rights, which could have a material adverse effect on our business, financial condition, and operating results. Policing unauthorized use of proprietary technology can be difficult and expensive. Also, litigation may be necessary to enforce our intellectual property rights, protect our

trade secrets, or determine the validity and scope of the proprietary rights of others. We cannot 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.

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

Our failure to obtain raw materials and components that meet our quality, quantity, and cost requirements in a timely manner could interrupt or impair our ability to manufacture our solar modules or increase our manufacturing cost. Some of our key raw materials and components are either single-sourced or sourced from a limited number of third party suppliers. As a result, the failure of any of our suppliers to perform could disrupt our supply chain and impair our operations. In addition, some of our suppliers are small companies that may be unable to supply our increasing demand for raw materials and components as we continue to expand rapidly. We may be unable to identify new suppliers or qualify their products for use on our production lines in a timely manner and on commercially reasonable terms. A constraint on our production may cause us to be unable to meet our capacity ramp plan and/or our obligations under our customer 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 and could adversely impact our profitability and long-term growth prospects.

A key raw material we use in our production process is a cadmium telluride compound. Tellurium, one of the main components of cadmium telluride, is mainly produced as a by-product of copper refining and, therefore, its supply is largely dependent upon demand for copper. Our supply of cadmium telluride could be limited if any of our current suppliers or any of our future suppliers are unable to acquire an adequate supply of tellurium in a timely manner or at commercially reasonable prices. If our competitors begin to use or increase their demand for cadmium telluride, supply could be reduced and prices could increase. If our current suppliers or any of our future suppliers cannot obtain sufficient tellurium, they could substantially increase prices or be unable to perform under their contracts. We may be unable to pass increases in the 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 substantial increase in tellurium prices could adversely impact our profitability and long-term growth objectives.

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

Our future success depends on our ability to effectively balance manufacturing production with market demand and increase both our manufacturing capacity and production throughput over time in a cost-effective and efficient manner. If we cannot do so, we may be unable to expand our business, decrease our manufacturing cost per watt, maintain our competitive position, satisfy our contractual obligations, or sustain profitability. See “An increased global supply of PV modules has caused and may continue to cause structural imbalances in which global PV module supply exceeds demand, which could have a material adverse effect on our business, financial condition and results of operations.” Our ability to expand production capacity is subject to significant risks and uncertainties, including the following:

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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;

- manufacturing concentration risk resulting from a majority of production lines worldwide being located in one geographic area, Malaysia;

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

- Incurring manufacturing asset write-downs, write-offs and other charges and costs, which may be significant, during those periods in which we idle, slow down or shut down manufacturing capacity.

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

If we are unable to systematically replicate our production lines as necessary over time and achieve and sustain similar operating metrics in our future production lines as we have achieved at our existing production lines, our manufacturing capacity could be substantially constrained, our manufacturing costs per watt could increase, and 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. For instance, future production lines could produce solar modules that have lower conversion efficiencies, higher failure rates, and higher rates of degradation than solar modules from our existing production lines, and we could be unable to determine the cause of the lower operating metrics or develop and implement solutions to improve performance.

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

Some of our manufacturing equipment is customized to our production lines based on designs or specifications that we provide to 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. 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, our profitability could decline.

Our profitability could decline if we are unable to continue to reduce our manufacturing cost per watt. 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 provide utility-scale PV generation to existing and new geographic markets and to maintain or increase market share. To manage the continued expansion of our operations, we will be required to continue to improve our operational and financial systems, procedures and controls, and expand, train, 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 controls and procedures 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.

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

We have significant marketing, distribution, and manufacturing operations both within and outside the United States. We expect to continue to expand our operations into China, India, other countries in Europe, Asia, the Middle East, and elsewhere; as a result, we will be subject to the legal, political, social, tax, and regulatory requirements, and economic conditions of many jurisdictions. Risks inherent to international operations, include, but are not limited to, the following:

- difficulty in enforcing agreements in foreign legal systems;

- varying degrees of protection afforded to foreign investments in the countries in which we operate, and irregular interpretations and enforcement of laws and regulations in these jurisdictions;

- foreign countries may impose additional income and withholding taxes or otherwise tax our foreign operations, impose tariffs, or adopt other restrictions on foreign trade and investment, including currency exchange controls;

- fluctuations in exchange rates may affect product demand and may adversely affect our profitability in U.S. dollars to the extent the price of our solar modules and cost of raw materials, labor, and equipment is denominated in a foreign currency;

- inability to obtain, maintain, or enforce intellectual property rights;

- risk of nationalization or other expropriation of private enterprises;

- changes in general economic and political conditions in the countries in which we operate, including changes in the government incentives we are relying on;

- unexpected adverse changes in foreign laws or regulatory requirements, including those with respect to environmental protection, export duties, and quotas;

- opaque approval processes in which the lack of transparency may cause delays and increase the uncertainty of project approvals;

- difficulty in staffing and managing widespread operations;

- difficulty in repatriating earnings;

- difficulty in negotiating a successful collective bargaining agreement in applicable foreign jurisdictions;

- trade barriers such as export requirements, tariffs, taxes, local content requirements, anti-dumping regulations and requirements, and other restrictions and expenses, which could increase the price of our solar modules and make us less competitive in some countries; and

- difficulty of, and costs relating to, compliance with the different commercial and legal requirements of the overseas countries in which we offer and sell our solar modules.

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

Risks Related to Our Systems Business

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

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

- obtaining satisfactory land rights, including environmental mitigation lands;

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

- receipt of rights to interconnect the project to the electric grid or to transmit energy;

- payment of interconnection and other deposits (some of which are non-refundable);
- negotiation of satisfactory engineering, procurement, and construction agreements;
- entering into financeable arrangements for the purchase of the electrical output and renewable energy attributes generated by the project;
- securing a project site and necessary rights of way;
- obtaining construction financing, including debt, equity and funds associated with the monetization of tax credits and other tax benefits; and
- timely implementation and satisfactory completion of construction.

Successful completion of a particular project may be adversely affected by numerous factors, including:

- delays in obtaining and maintaining required governmental permits and approvals, including appeals of approvals obtained;
- potential challenges from project stakeholders, including local residents, environmental organizations, and others who may not support the project;
- unforeseen engineering problems;
- construction delays and contractor performance shortfalls;
- work stoppages;
- cost over-runs;
- labor, equipment and materials supply shortages or disruptions;
- additional complexities when conducting project development or construction activities in foreign jurisdictions (either on a stand-alone basis or in collaboration with local business partners), including operating in accordance with the U.S. Foreign Corrupt Practices Act and applicable local laws and customs;
- unfavorable tax treatment;
- adverse weather conditions;
- adverse environmental and geological conditions; and
- force majeure and other events out of our control.

If we are unable to complete the development of a solar power facility, we fail to meet one or more agreed target construction milestone dates, any agreed upon system-level capacity or energy output guarantees or warranties (including, for some projects, twenty-five year energy performance or system-level module degradation warranties and guarantees), or other contract terms, or our projects cause grid interference or other damage, we may be subject to

forfeiture of significant deposits under power purchase agreements or interconnection agreements or termination of such agreements, significant liquidated damages, penalties and/or other obligations under the EPC agreement or other agreements relating to the project (including obligations to repair, replace and/or supplement additional modules and balance of system materials for the project), particularly if our liabilities are not capped under the terms of such agreement, and we typically will not be able to recover our investment in the project. Some of these penalties might require us to repurchase the project from the buyer or to down-size the project, under certain circumstances. If we were required to repurchase a project, we may have insufficient cash or capital resources necessary to make the repurchase payment or we may be unable to resell the project in a timely manner or on terms commercially satisfactory to us, which would adversely impact our results of operations. Some of these investments are included as assets on our consolidated balance sheet under the line item “Project assets.” If we are unable to complete the development of a solar power project, we may write-down or write-off some or all of these capitalized investments, which would have an adverse impact on our net income in the period in which

the loss is recognized. In 2012, we expect to invest a significant amount of capital to develop projects owned by us or third parties, which may limit the availability of capital to use for other purposes, such as contract damages or repurchase payments.

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

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

In order to construct and operate our PV plants, we need to acquire or lease land and rights of way, obtain interconnection rights, and obtain all necessary local, county, state, federal, and foreign approvals, licenses, and permits as well as rights to interconnect the plants to the transmission grid and transmit energy generated from the plant. We may be unable to acquire the land or lease interests needed, may not obtain satisfactory interconnection rights, may not receive or retain the requisite approvals, permits, licenses and interconnection and transmission rights, or may encounter other problems which could delay or prevent us from successfully constructing and operating PV plants.

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

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

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

In order to deliver electricity from our PV plants to our customers, our projects generally need to connect to the transmission grid. The lack of available capacity on the transmission grid could substantially impact our projects and

cause reductions in project size, delays in project implementation, increases in costs from transmission upgrades, and potential forfeitures of any deposit we have made with respect to a given project. These transmission issues, as well as issues relating to the availability of large systems such as transformers and switch gear, could significantly impact our ability to build PV plants and generate solar electricity sales.

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

The construction of the large utility-scale solar power projects under development by us is expected in many cases to require project financing, including non-recourse project debt financing in the bank loan market and institutional debt capital markets. Uncertainties exist as to whether our projects will be able to access the debt markets in a magnitude sufficient to finance their construction. If we are unable to arrange such financing or if it is only available on unfavorable terms, we may be unable to fully execute our systems business plan. In addition, we generally expect to sell our projects by raising project equity capital from tax- oriented, strategic industry, and other equity investors. Such equity sources may not be available or may only be available in insufficient amounts, in which case our ability to sell our projects may be delayed or limited and our business, financial condition, or results of operations may be adversely affected. Even if such financing sources are available, the counterparty to many of our

fixed-price EPC contracts, which own the project we are constructing, are often special purpose vehicles that do not have significant assets other than their interests in the project and have pledged all or substantially all of these assets to secure the project-related debt and certain other sources of financing. If the owner defaults on its payment or other obligations to us, we may face difficulties in collecting payment of amounts due to us for the costs previously incurred or for the amounts previously expended or committed to be expended to purchase equipment or supplies (including intercompany purchases of PV modules), or for termination payments we are entitled to under the terms of the related EPC contract. If we are unable to collect the amounts owed to us, or are unable to complete the project because of an owner default, we may be required to record a charge against earnings related to the project, which could result in a material loss.

In addition, for projects to which we provide EPC services but are not the project developer, our EPC activities are in many cases dependent on the ability of third parties to finance their PV plant projects, which, in turn, is dependent on their ability to obtain financing for such purchases on acceptable terms. Depending on prevailing conditions in the credit markets, interest rates and other factors, such financing may not be available or may only be available on unfavorable terms or in insufficient amounts. If third parties are limited in their ability to access financing to support their purchase of PV power plant construction services from us, we may not realize the cash flows that we expect from such sales, and this could adversely affect our ability to invest in our business and/or generate revenue. See also the risk factor above entitled “An increase in interest rates or 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 PV modules.”

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

Our solar power project development cycles, which span the time between the identification of land and the commercial operation of a PV power plant project, vary substantially and can take many months or years to mature. As a result of these long project cycles, we may need to make significant upfront investments of resources (including, for example, payments for land rights, large transmission and PPA deposits or other payments, which may be non-refundable) in advance of the signing of EPC contracts and commencing construction and the receipt of any revenue, much of which is not recognized for several additional months or years following contract signing. Our potential inability to enter into sales contracts with potential customers after making such upfront investments could adversely affect our business and results of operations. Furthermore, we may become constrained in our ability to simultaneously fund our other business operations and these systems investments through our long project development cycles.

Our liquidity may be adversely affected to the extent the project sale market weakens and we are unable to sell our solar projects on pricing, terms and timing commercially acceptable to us.

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

Obtaining long-term contracts for the sale of power produced by the projects at prices and on other terms favorable to us is essential for obtaining financing and commencing construction of our projects. We must compete for power purchase agreements against other developers of solar and renewable energy projects. Further, other sources of power, such as natural gas-fired power plants, have historically been cheaper than the cost of solar power and power from certain types of projects, such as natural gas-fired power plants, can be delivered on a firm basis. The inability to compete successfully against other power producers or otherwise enter into PPAs favorable to us would negatively affect our ability to develop and finance our projects and negatively impact our revenue. In addition, the availability of

power purchase agreements is a function of a number of economic, regulatory, tax and public policy factors.

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

For solar power plants which we have developed and built, we may provide ongoing O&M services to the system owner under fixed-price long-term service agreements, pursuant to which we generally perform all scheduled and unscheduled maintenance for the system, perform operating and other asset management services for the system and provide an availability guarantee for the system. Our costs to perform these services are estimated at the time of entering into the O&M agreement for a particular project, and these are reflected in the fixed-price that we charge our customers under the O&M agreement. We do not have extensive experience in performing O&M services for PV solar power plants and estimating actual costs to serve under our O&M agreements relative to the price that we charge our customers, particularly in foreign jurisdictions in which we plan to offer PV systems solutions as part of our Long Term Strategic Plan. Should miscalculations in estimating these costs occur (including those due to unexpected increases in inflation or labor or BoS costs), our growth strategy and results of operations could be

adversely affected. Because of the long-term nature of these O&M agreements, such as 25 years, such adverse impacts on results of operations could be significant, particularly if our liabilities are not capped or subject to an above-market liability cap under the terms of the O&M agreement. We also could be subject to substantial costs, liabilities or obligations in the event our solar systems do not meet any agreed-upon system-level availability or performance warranties.

Other Risks

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

We have made several acquisitions in the last several years, and in the future we may acquire additional companies, project pipelines, products, or technologies or enter into joint ventures or other strategic initiatives. We may not realize the anticipated benefits of an acquisition and each acquisition has numerous risks. These risks include the following:

- difficulty in assimilating the operations and personnel of the acquired company;
- difficulty in effectively integrating the acquired technologies or products with our current products and technologies;
- difficulty in maintaining controls, procedures, and policies during the transition and integration;
- disruption of our ongoing business and distraction of our management and associates from other opportunities and challenges due to integration issues;
- difficulty integrating the acquired company's accounting, management information, and other administrative systems;
- inability to retain key technical and managerial personnel of the acquired business;
- inability to retain key customers, vendors, and other business partners of the acquired business;
- inability to achieve the financial and strategic goals for the acquired and combined businesses, as a result of insufficient capital resources or otherwise;
- incurring acquisition-related costs or amortization costs for acquired intangible assets that could impact our operating results;
- potential impairment of our relationships with our associates, customers, partners, distributors, or third party providers of technology or products;
- potential failure of the due diligence processes to identify significant issues with product quality, legal and financial liabilities, among other things;
- potential inability to assert that internal controls over financial reporting are effective;
- potential inability to obtain, or obtain in a timely manner, approvals from governmental authorities, which could delay or prevent such acquisitions; and
- potential delay in customer purchasing decisions due to uncertainty about the direction of our product offerings.

Mergers and acquisitions of companies are inherently risky, and ultimately, if we do not complete the integration of acquired businesses successfully and in a timely manner, we may not realize the anticipated benefits of the acquisitions to the extent anticipated, which could adversely affect our business, financial condition, or results of operations.

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

We are dependent on the services of our executive officers and other members of our senior management team. The loss of one or more of these key associates or any other member of our senior management team could have a material adverse effect on us. We may not be able to retain or replace these key associates, and we may not have adequate succession plans in place. Several of our current key associates including our executive officers are subject to employment conditions or arrangements that contain

post-employment non-competition provisions. However, these arrangements permit the associates to terminate their employment with us upon little or no notice and the enforceability of the non-competition provisions is uncertain.

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

Our future success depends, to a significant extent, on our ability to attract, train, and retain management, operations, and technical personnel, including in foreign jurisdictions as we continue to execute on our Long Term Strategic Plan. Recruiting and retaining capable personnel, particularly those with expertise in the PV industry and thin-film technology, are vital to our success. There is substantial competition for qualified technical personnel and there can be no assurance that we will be able to attract or retain our technical personnel. If we are unable to attract and retain qualified associates, or otherwise experience labor disruptions our business may be materially and adversely affected.

Certain types of services provided by onsite workers at certain of our solar projects under construction are subject to the Davis-Bacon Act. The Davis-Bacon Act requires that a contractor pay all personnel assigned to the contract at least the prevailing wage and fringe benefits, as established by and in accordance with the regulations promulgated by the U.S. Department of Labor ("DOL"). We have an established policy pursuant to which we evaluate Davis-Bacon Act requirements and ensure our compliance with these requirements. If the DOL were to ultimately determine that anyone working under such contracts were not properly classified, or were being paid the incorrect prevailing wage, we could incur additional liability with respect to such workers. For example, the Agua Caliente project we are constructing is currently undergoing a DOL Davis-Bacon Act compliance review, for which the ultimate outcome is uncertain. Any such liability incurred above our anticipated costs for these services could have an adverse effect on our financial condition and results of operations.

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

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

Currency translation and transaction risk may negatively affect our net sales, cost of sales, and gross margins and could result in exchange losses.

Although our reporting currency is the U.S. dollar, we conduct our business and incur costs in the local currency of most countries in which we operate. As a result, we are subject to currency translation and transaction risk. For example, 4% and 43% of our net sales were denominated in euros for the years ended December 31, 2012 and December 31, 2011, respectively, and we expect more than a minor percentage of our net sales to be outside the United States and denominated in foreign currencies in the future. In addition, our operating expenses for our

manufacturing plants located outside the U.S. and our operations for our systems business in foreign countries will generally be denominated in the local currency. Changes in exchange rates between foreign currencies and the U.S. dollar could affect our net sales and cost of sales and could result in exchange gains or losses. We cannot accurately predict the impact of future exchange rate fluctuations on our results of operations.

We could also expand our business into emerging markets, many of which have an uncertain regulatory environment relating to currency policy. Conducting business in such emerging markets could cause our exposure to changes in exchange rates to increase.

Our ability to hedge foreign currency exposure is dependent on our credit profile with the banks that are willing and able to do business with us. Deterioration in our credit position or a significant tightening of the credit market conditions could limit our ability to hedge our foreign currency exposure; and therefore, result in exchange gains or losses.

The ongoing sovereign debt problems in Europe could adversely impact our business.

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

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

From time to time, we are subject to legal claims, with and without merit, that may be costly and which may divert the attention of our management and our resources in general. The results of complex legal proceedings are difficult to predict. Moreover, many of the complaints filed against us do not specify the amount of damages that plaintiffs seek, and we therefore are unable to estimate the possible range of damages that might be incurred should these lawsuits be resolved against us. Certain of these lawsuits assert types of claims that, if resolved against us, could give rise to substantial damages, and an unfavorable outcome or settlement of one or more of these lawsuits, or any future lawsuits, could have a material adverse effect on our business, financial condition, or results of operations. Even if these lawsuits, or any future lawsuits, are not resolved against us, the costs of defending such lawsuits, may be costly, and may not be covered by our insurance policies. Because the price of our common stock has been, and may continue to be, volatile, we can provide no assurance that additional securities litigation will not be filed against us in the future. For more information on our legal proceedings, see Part I, Item 3 “Legal Proceedings” of this report and Note 17. “Commitments and Contingencies - Legal Proceedings” to our consolidated financial statements included in this report.

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

Our largest stockholder, consisting collectively of JCL FSLR Holdings, LLC and its beneficiaries and JTW Trust No. 1 UAD 9/19/02 and its beneficiaries, each affiliated in the past with the former Estate of John T. Walton (collectively, the Significant Stockholder), owned approximately 30% of our outstanding common stock at December 31, 2012. As a result, the Significant Stockholder has substantial influence over all matters requiring stockholder approval, including the election of our directors and the approval of significant corporate transactions such as mergers, tender offers, and the sale of all or substantially all of our assets. The interests of the Significant Stockholder could conflict with or differ from interests of other stockholders. For example, the concentration of ownership held by the Significant Stockholder could delay, defer or prevent a change of control of our company or impede a merger, takeover, or other business combination which a majority of stockholders may view favorably.

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

We may be required to record a significant charge to earnings in our financial statements should we determine that our goodwill or project assets are impaired. Such a charge might have a significant impact on our financial position and results of operations. For example, during the fourth quarter of 2011 we recorded goodwill impairment expense of $393.4 million related to our components reporting unit as discussed further in Note 6. “Goodwill and Intangible Assets,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

As required by accounting rules, we review our goodwill for impairment at least annually in the fourth quarter or more frequently if facts and circumstances indicate that it is more likely than not that the fair value of a reporting unit that

has goodwill is less than its carrying value. Factors that may be considered a change in circumstances indicating that the carrying value of our goodwill might not be recoverable include a significant decline in our stock price and market capitalization, a significant decline in projections of future cash flows and lower future growth rates in our industry. We review project assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. We consider a project commercially viable and recoverable if it is anticipated to be sellable for a profit once it is either fully developed or fully constructed. If our projects are not considered commercially viable, we would be required to impair the respective project assets.

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

We are subject to income taxes in the United States and the foreign jurisdictions in which we operate. Our tax liabilities are

affected by the amounts we charge for inventory, services, licenses, funding, and other items in inter-company transactions. We are subject to potential tax examinations in these various jurisdictions. Tax authorities may disagree with our inter-company charges, cross-jurisdictional transfer pricing or other tax positions and assess additional taxes. We regularly assess the likely outcomes of these examinations in order to determine the appropriateness of our tax provision in accordance with ASC 740, Income Taxes. However, there can be no assurance that we will accurately predict the outcomes of these potential examinations, and the amounts ultimately paid upon resolution of examinations could be materially different from the amounts previously included in our income tax expense and therefore, could have a material impact on our tax provision, net income, and cash flows. In addition, our future effective tax rate could be adversely affected by changes to our operating structure, loss of our Malaysian tax holiday, changes in the mix of earnings in countries with tax holidays or differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in tax laws, and the discovery of new information in the course of our tax return preparation process. In addition, recently announced proposals for new U.S. tax legislation could have a material effect on the results of our operations; if enacted.

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

We may be unable to respond to changes in business and economic conditions, engage in transactions that might otherwise be beneficial to us, and obtain additional financing, if needed, because our Revolving Credit Facility and our Malaysian facility agreements contain, and any of our other future debt agreements may contain, covenant restrictions that limit our ability to, among other things:

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

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

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

Our principal properties consisted of the following:

Nature	Primary Segment(s) Using Property	Location	Held	Major Encumbrances
Manufacturing Plant, Research and Development Facility and Administrative Offices	Components	Perrysburg, Ohio, United States	Own	State of Ohio Loan (1)
Manufacturing Plants (2)	Components	Frankfurt/Oder, Germany	Own	n/a
Manufacturing Plants and Administrative Offices	Components	Kulim, Kedah, Malaysia	Lease Land/Own Buildings	Malaysian Ringgit Facility Agreement (1)
Manufacturing Plant (3)	Components	Ho Chi Minh City, Vietnam	Lease Land/Own Building	n/a
Manufacturing Plant, Administrative Office and Temporary Warehouse (4)	Components & Systems	Mesa, Arizona, United States	Own	n/a
Corporate Headquarters	Components & Systems	Tempe, Arizona, United States	Lease	n/a
Administrative Office	Systems	Bridgewater, New Jersey, United States	Lease	n/a
Administrative Office	Systems	San Francisco, California, United States	Lease	n/a
Research and Development Facility	Components	Santa Clara, California, United States	Lease	n/a
Administrative Office	Components & Systems	Mainz, Germany	Lease	n/a

(1) See Note 16. “Debt,” to our consolidated financial statements included in this Annual Report on Form 10-K for additional information on property encumbrances.

(2) Manufacturing ceased in December 2012.

(3) We did not proceed with our previously announced 4-line plant in Vietnam and such property is being actively marketed for sale.

(4) We have indefinitely postponed the commissioning of our previously announced 4-line plant in Mesa, Arizona until global supply and demand dynamics support the additional manufacturing capacity. The building is currently being used as operations and administrative offices for our systems business and for temporary warehousing needs for both our systems and components businesses.

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

Item 3: Legal Proceedings

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

On September 23, 2011, the Company informed the staff of the Securities and Exchange Commission (the “SEC”) that the Company was commencing an internal investigation regarding a possible violation of Regulation FD. The possible violation arose in connection with disclosures on September 21, 2011, relating to the failure of the Topaz Solar Farm project to meet the statutory deadline to receive a federal loan guarantee from the US Department of Energy. This internal investigation was conducted on behalf of the Company’s board of directors by independent outside counsel. Following completion of the internal investigation, the Company appointed a new Vice President of Investor Relations. The SEC, pursuant to an order dated November 17, 2011, commenced an investigation into the matter, and the Company has cooperated with the SEC during the course of its investigation.

Class Action

On March 15, 2012, a purported class action lawsuit titled Smilovits v. First Solar, Inc., et al., Case No. 2:12-cv-00555-DGC, was filed in the United States District Court for the District of Arizona (hereafter "Arizona District Court") against the Company and certain of our current and former directors and officers. The complaint was filed on behalf of purchasers of the Company's securities between April 30, 2008, and February 28, 2012. The complaint generally alleges that the defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 by making false and misleading statements regarding the Company's financial performance and prospects. The action includes claims for damages, and an award of costs and expenses to the putative class, including attorneys' fees.

On July 23, 2012, the Arizona District Court issued an order appointing as lead plaintiffs in the class action the Mineworkers' Pension Scheme and British Coal Staff Superannuation Scheme (collectively "Pension Schemes"). The Pension Schemes filed an amended complaint on August 17, 2012, which contains similar allegations and seeks similar relief as the original complaint. Defendants filed a motion to dismiss on September 14, 2012. On December 17, 2012, the Court denied the motion to dismiss. Defendants answered the complaint on January 29, 2013.

The action is still in the initial stages and there has been no discovery. Accordingly, we are not in a position to assess whether any loss or adverse effect on our financial condition is probable or remote or to estimate the range of potential loss, if any. The Company believes it has meritorious defenses and will vigorously defend this action.

Derivative Actions

On April 3, 2012, a derivative action titled Tsevegmid v. Ahearn, et al., Case No. 1:12-cv-00417-CJB, was filed by a putative stockholder on behalf of the Company in the United States District Court for the District of Delaware (hereafter "Delaware District Court") against certain current and former directors and officers of the Company, alleging breach of fiduciary duties and unjust enrichment. The complaint generally alleges that from June 1, 2008, to March 7, 2012, the defendants caused or allowed false and misleading statements to be made concerning the Company's financial performance and prospects. The action includes claims for, among other things, damages in favor of the Company, certain corporate actions to purportedly improve the Company's corporate governance, and an award of costs and expenses to the putative plaintiff stockholder, including attorneys' fees. On April 10, 2012, a second derivative complaint was filed in the Delaware District Court. The action, titled Brownlee v. Ahearn, et al., Case No. 1:12-cv-00456-CJB, contains similar allegations and seeks similar relief to the Tsevegmid action. By Court order on April 30, 2012, pursuant to the parties' stipulation, the Tsevegmid action and the Brownlee action were consolidated into a single action in the Delaware District Court. On May 15, 2012, defendants filed a motion challenging Delaware as the appropriate venue for the consolidated action. The Court has not yet ruled on that motion.

On April 12, 2012, a derivative complaint was filed in the Arizona District Court, titled Tindall v. Ahearn, et al., Case No. 2:12-cv-00769-ROS. In addition to alleging claims and seeking relief similar to the claims and relief asserted in the Tsevegmid and Brownlee actions, the Tindall complaint alleges violations of Sections 14(a) and 20(b) of the Securities Exchange Act of 1934. On April 19, 2012, a second derivative complaint was filed in the Arizona District Court, titled Nederhood v. Ahearn, et al., Case No. 2:12-cv-00819-JWS. The Nederhood complaint contains similar allegations and seeks similar relief to the Tsevegmid and Brownlee actions. On May 17, 2012 and May 30, 2012, respectively, two additional derivative complaints, containing similar allegations and seeking similar relief as the Nederhood complaint, were filed in Arizona District Court: Morris v. Ahearn, et al., Case No. 2:12-cv-01031-JAT and Tan v. Ahearn, et al., 2:12-cv-01144-NVW.

On July 17, 2012, the Arizona District Court issued an order granting First Solar's motion to transfer the derivative actions to Judge David Campbell, the judge to whom the Smilovits class action is assigned. On August 8, 2012, the

Court consolidated the four derivative actions pending in Arizona District Court, and on August 31, 2012, Plaintiffs filed an amended complaint. Defendants filed a motion to stay the action on September 14, 2012. On December 17, 2012, the Court granted Defendants motion to stay the action, pending resolution of the Smilovits class action.

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

Item 4: Mine Safety Disclosures

None.

PART II

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

Price Range of Common Stock

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

	High	Low
Fiscal Year 2012		
First Quarter	$49.03	$25.05
Second Quarter	$24.53	$11.77
Third Quarter	$25.70	$14.00
Fourth Quarter	$33.03	$20.07
Fiscal Year 2011		
First Quarter	$175.45	$130.24
Second Quarter	$163.00	$111.40
Third Quarter	$134.21	$61.55
Fourth Quarter	$67.72	$29.87

The closing sales price of our common stock on The NASDAQ Global Select Market was $33.81 per share on February 22, 2013. As of February 22, 2013, there were 20 record holders of our common stock. This figure does not reflect the beneficial ownership of shares held in nominee names.

Dividend Policy

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

Equity Compensation Plans

The following table sets forth certain information, as of December 31, 2012, concerning securities authorized for issuance under the 2010 Omnibus Incentive Compensation Plan of our company:

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

			Reflected in Column (a))(c)
Equity compensation plans approved by our stockholders	5,845,667	$90.85	5,845,667
Equity compensation plans not approved by our stockholders	—	$—	—
Total	5,845,667		5,845,667

(1) Includes 5,735,208 shares issuable upon vesting of restricted stock units ("RSUs") granted under the 2010 Omnibus Incentive Compensation Plan. The remaining balance consists of outstanding vested stock option grants of 110,459 shares.

(2) The weighted average exercise price does not take into account the shares issuable upon vesting of outstanding RSUs,

which have no exercise price.

See Note 19. “Share-Based Compensation,” to our consolidated financial statements included in this Annual Report on Form 10-K for further discussion on the Equity Compensation Plans.

Stock Price Performance Graph

The following graph compares the cumulative 5-year total return on our common stock relative to the cumulative total returns of the S&P 500 Index and the Guggenheim Solar ETF, which represents a peer group of solar companies. We believe that the Guggenheim Solar ETF is representative of the solar industry as a whole and includes such companies as Canadian Solar, Inc., Hanwha Solar One Company Limited, SunPower Corporation, Suntech Power Holdings Company Limited, Trina Solar Limited and Yingli Green Energy Holding Company Limited. As such, we will discontinue the use of the peer groups used in previous filings. Since the Guggenheim Solar ETF was not publicly traded as of December 2007, we assumed the initial $100 investment was held in cash until trading started in April 2008. In the stock price performance graph included below, an investment of $100 (with reinvestment of all dividends) is assumed to have been made in our common stock, the S&P 500 Index, and the Guggenheim Solar ETF on December 29, 2007, and its relative performance is tracked through December 31, 2012. No cash dividends have been declared on shares of our common stock. This performance graph is not “soliciting material,” is not deemed filed with the SEC, and is not to be incorporated by reference in any filing by us under the Securities Act of 1933, as amended (the “Securities Act”), or the Exchange Act, whether made before or after the date hereof, and irrespective of any general incorporation language in any such filing. The stock price performance shown on the graph represents past performance and should not be considered an indication of future price performance.

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* $100 invested on 12/29/07 in stock or index, including reinvestment of dividends. Index calculated on a month end basis.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliate Purchases

None.

Item 6: Selected Financial Data

The following table sets forth our selected consolidated financial data for the periods and at the dates indicated.

The selected consolidated financial information from the consolidated statements of operations and consolidated statements

of cash flows for the fiscal years ended December 31, 2012, December 31, 2011, and December 31, 2010 and the selected consolidated financial data from the consolidated balance sheets for the fiscal years ended December 31, 2012 and December 31, 2011 has been derived from the audited consolidated financial statements included in this Annual Report on Form 10-K. The selected consolidated financial data from the consolidated balance sheets for the fiscal years ended December 31, 2010, December 26, 2009 and December 27, 2008 and selected consolidated financial information from the consolidated statements of operations and consolidated statements of cash flows for the fiscal years ended December 26, 2009 and December 27, 2008 have been derived from audited consolidated financial statements not included in this Annual Report on Form 10-K. The information presented below should be read in conjunction with Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and our consolidated financial statements and the related notes thereto.

	Years Ended				
	Dec 31, 2012	Dec 31, 2011	Dec 31, 2010	Dec 26, 2009	Dec 27, 2008
	(In thousands, except per share amounts)				
Statement of Operations Data:					
Net sales	$3,368,545	$2,766,207	$2,563,515	$2,066,200	$1,246,301
Cost of sales	2,515,796	1,794,456	1,378,669	1,021,618	567,908
Gross profit	852,749	971,751	1,184,846	1,044,582	678,393
Research and development	132,460	140,523	94,797	78,161	33,517
Selling, general and administrative	280,928	412,541	321,704	272,898	174,039
Production start-up	7,823	33,620	19,442	13,908	32,498
Goodwill impairment	—	393,365	—	—	—
Restructuring	469,101	60,366	—	—	—
Operating (loss) income	(37,563)	(68,664)	748,903	679,615	438,339
Foreign currency (loss) gain	(2,122)	995	(3,468)	5,207	5,722
Interest income	12,824	13,391	14,375	9,735	21,158
Interest expense, net	(13,888)	(100)	(6)	(5,258)	(509)
Other income (expense), net	945	665	2,273	(2,985)	(934)
Income tax expense (benefit)	56,534	(14,220)	97,876	46,176	115,446
Net (loss) income	$(96,338)	$(39,493)	$664,201	$640,138	$348,330
Net (loss) income per share data:					
Basic net (loss) income per share:					
Net (loss) income per share	$(1.11)	$(0.46)	$7.82	$7.67	$4.34
Weighted average shares	86,860	86,067	84,891	83,500	80,178
Diluted net (loss) income per share:					
Net (loss) income per share	$(1.11)	$(0.46)	$7.68	$7.53	$4.24
Weighted average shares	86,860	86,067	86,491	85,044	82,124
Cash dividends declared per common share	$—	$—	$—	$—	$—

	Years Ended				
	Dec 31, 2012	Dec 31, 2011	Dec 31, 2010	Dec 26, 2009	Dec 27, 2008
	(In thousands)				
Cash Flow Data:					
Net cash provided by (used in) operating activities	$762,209	$(33,463)	$705,492	$675,193	$463,067
Net cash used in investing activities	(383,732)	(676,457)	(742,085)	(701,690)	(308,441)
Net cash (used in) provided by financing activities	(89,109)	571,218	150,451	(22,021)	177,549

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	Years Ended				
	Dec 31, 2012	Dec 31, 2011	Dec 31, 2010	Dec 26, 2009	Dec 27, 2008
	(In thousands)				
Balance Sheet Data:					
Cash and cash equivalents	$901,294	$605,619	$765,689	$664,499	$716,218
Marketable securities, current and noncurrent	102,578	182,338	348,160	449,844	105,601
Accounts receivable, net	553,567	310,568	305,537	226,826	61,703
Accounts receivable, unbilled	400,987	533,399	1,482	58	—
Inventories, current and noncurrent	569,296	536,618	238,591	174,516	121,554
Balance of systems parts	98,903	53,784	4,579	—	—
Property, plant and equipment, net	1,525,382	1,815,958	1,430,789	988,782	842,622
Project assets, current and noncurrent	358,824	374,881	320,140	132,496	—
Deferred project costs	21,390	197,702	—	—	—
Deferred tax assets, current and noncurrent	361,543	381,418	259,624	152,194	71,247
Total assets	6,348,692	5,777,614	4,380,403	3,349,512	2,114,502
Total long-term debt	562,572	663,648	237,391	174,958	198,470
Accrued solar module collection and recycling liability	212,835	167,378	132,951	92,799	35,238
Total liabilities	2,743,166	2,133,751	925,458	696,725	601,460
Total stockholders' equity	3,605,526	3,643,863	3,454,945	2,652,787	1,513,042

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

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

Unit of Power

When referring to our manufacturing capacity, total sales and components sales, the unit of electricity in watts for megawatts ("MW") and gigawatts ("GW") is direct current ("DC") unless otherwise noted. When referring to our solar power systems, the unit of electricity in watts for MW and GW is alternating current ("AC") unless otherwise noted.

Overview

We are a premium global provider of solar energy solutions. We manufacture and sell photovoltaic ("PV") solar modules with an advanced thin-film semiconductor technology, and we design, construct, and sell PV solar power systems that use the solar modules we manufacture. We are the world's largest thin-film PV solar module manufacturer and one of the world's largest PV solar module manufacturers.

In addressing overall global demand for PV solar electricity, we have developed a differentiated, fully integrated systems business that can provide a competitively priced turn-key utility-scale PV system solution for system owners

and competitively priced electricity to utility end-users. Our fully integrated systems business, which uses the solar modules we manufacture, has enabled us to increase module throughput, drive cost reduction across the value chain, identify and break constraints to sustainable markets, and deliver compelling solutions to our customers and end-users. With our fully integrated systems business, we believe we are in a position to expand our business in economically sustainable markets (in which support programs are minimal), which are developing in areas with abundant solar resources and sizable electricity demand. We are committed to continually lowering the cost of solar electricity, and in the long term, we plan to compete on an economic basis with conventional fossil-fuel-based peaking power generation.

In furtherance of our goal of delivering affordable solar electricity, we are continually focused on reducing PV solar system costs in four primary areas: module manufacturing, balance of systems ("BoS") costs (consisting of the costs of the components of a solar power system other than the solar modules, such as inverters, mounting hardware, trackers, grid interconnection equipment, wiring and other devices, and installation labor costs), project development costs, and the 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 among the lowest in the world for modules produced on a commercial scale, based on publicly available information. In 2012, our total average manufacturing costs were $0.73 per watt, which is competitive on a comparable basis with those of traditional crystalline silicon solar module manufacturers, based on publicly available information. By continuing to improve conversion efficiency, production line throughput, and lower material costs, we believe that we can further reduce our manufacturing costs per watt and maintain cost competitiveness with traditional crystalline silicon solar module manufacturers. Second, with respect to our BoS cost reduction roadmap, we have aggressive programs which target key improvements in components and system design, which when combined with continued improvements in conversion efficiency, volume procurement around standardized hardware platforms, use of innovative installation techniques and know how, and accelerated installation times, are expected to result in substantial reductions to our BoS costs enabling a lower system levelized cost of energy. Third, with respect to our project development costs, we seek optimal site locations in an effort to minimize transmission and permitting costs, and to accelerate lead times to electricity generation. Finally, with respect to the cost of capital, by continuing to demonstrate the financial viability and operational performance of our utility-scale PV solar power plants and increasing our PV solar power system operating experience, we believe we can continue to lower the cost of capital associated with our PV solar power systems, thereby further enhancing the economic viability of our projects and lowering the cost of electricity generated by PV solar power systems that incorporate our modules and technology.

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, accelerate the adoption of our technology in utility-scale PV solar power systems, and identify and remove constraints to the successful migration to sustainable solar markets around the world. Our vertically integrated capabilities enable us to maximize value and mitigate risk for our customers and thereby deliver meaningful PV energy solutions to varied energy problems worldwide. We offer leadership across the entire solar value chain, resulting in more reliable and cost effective PV energy solutions for our customers, and furthering our mission to create enduring value by enabling a world powered by clean, affordable solar electricity.

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules which convert sunlight into electricity. Third-party customers of our components segment include project developers, system integrators, and operators of renewable energy projects.

Our second segment is our fully integrated systems business ("systems segment"), through which we provide complete turn-key PV solar power systems, or solar solutions that draw upon our capabilities, which include (i) project development, (ii) 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. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems which use our solar modules, and such products and services are sold directly to investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners.

Market Overview

The solar industry experienced a challenging environment in 2012, categorized by intense pricing competition, both at the PV module and system level, with many solar companies generating little or no operating income. In the aggregate, manufacturers of solar modules and cells have installed production capacity that significantly exceeds global demand. We believe this structural imbalance between supply and demand (i.e., where production capacity significantly exceeds current global demand) may continue for the foreseeable future, and we expect it will continue to put pressure on pricing and our results of operations in 2013. We further believe that this structural imbalance will remain unfavorable for solar companies that are primarily module manufacturers, but that companies with established expertise and meaningful solutions in other areas of the solar value chain, such as project development, EPC capabilities, and O&M services, are more likely to develop economically sustainable businesses. In light of such market realities, we continue to execute on our Long Term Strategic Plan described below under which we are focusing on our competitive strengths. A key core strength is our differentiated vertically integrated business model that enables us to provide utility-scale PV generation solutions to sustainable geographic markets that have an immediate need for mass-scale PV electricity.

The development of solar markets worldwide continued throughout 2012, in part aided by demand elasticity resulting from declining industry average selling prices, both at the PV module and system level, which makes solar power more affordable to

new markets, and we have continued to develop our localized presence and expertise in these markets. In the United Arab Emirates, we announced in October 2012 that we were selected by the Dubai Electricity & Water Authority ("DEWA") to construct a 13 MW AC PV power plant near Dubai. In India, we announced in October 2012 the entry into an agreement to supply First Solar modules to two PV power plants totaling 50 MW DC to be constructed in India's Rajasthan state. In Australia, First Solar, Verve Energy and GE Energy Financial Services officially began commercial operation in October 2012 of a First Solar built 10 MW AC plant that will help power the Southern Seawater Desalination Plant in Western Australia. In China, we announced in September 2012 the appointment of a country head to lead business development in China, with responsibility for expanding the market for utility-scale solar PV power plants using our modules in that country, and in December 2012 we announced a collaboration with Zhenfa New Energy Science & Technology Co., Ltd. to supply 2 MW of our modules in 2013 to one of Zhenfa's approved solar projects in China as part of our first commercial demonstration project in China. In Thailand, we announced in August 2012 the establishment of a Thai operating subsidiary and the opening of an office in Bangkok to enable First Solar to execute its strategy and pursue opportunities for utility scale PV power plants in the local market. In South Africa, we announced in December 2012 the appointment of a director of business development for Sub-Saharan Africa in our newly established office in Cape Town. In Chile, we announced in January 2013 our acquisition of Solar Chile, a Santiago-based solar development company with a portfolio of early- to mid-stage utility-scale PV power projects totaling approximately 1.5 GW in northern Chile, including the Atacama Desert region, which offers among the highest solar irradiance in the world.

In North America, we continue to execute on our advance stage utility-scale systems pipeline. We continue to make construction progress on what will be among the world's four largest solar PV power plants: the 550 MW AC Topaz Solar Farm, located in San Luis Obispo County, California; the 550 MW AC Desert Sunlight Solar Farm, located west of Blythe, California; the 290 MW AC Agua Caliente project in Yuma County, Arizona; and the 230 MW AC Antelope Valley Solar Ranch One project ("AVSR1"), located just north of Los Angeles, California. The Agua Caliente project is currently the largest operating PV power plant in the world and has achieved a peak generating capacity of more than 250 MW AC while connected to the electrical grid. We expect a substantial portion of our consolidated net sales, operating income and cash flows through 2014 to be derived from these four projects. We continue to advance the development and selling efforts for the other projects included in our advanced stage systems pipeline and we continue to evaluate additions to such pipeline. In September 2012, we announced execution of power purchase agreements with Pacific Gas and Electric Company ("PG&E") for 72 MW AC of solar electricity to be generated at two PV power plants that First Solar is developing in central California: the 32 MW AC Lost Hills project in Kern County and the 40 MW AC Cuyama project in Santa Barbara County. In September 2012, we also announced the entry into agreements to construct four solar power plants totaling up to 22 MW AC in New Mexico for PNM Resources, Inc. In January 2013, we announced that we started constructing the 139 MW AC Campo Verde Solar Project, located near El Centro in Imperial County, California. We also announced in January 2013 our acquisition of the 50 MW AC Macho Springs Solar project in Luna County, New Mexico, which will be the state's largest solar power project when completed.

In 2012, industry average module pricing continued to decline as competitors reduced prices to sell-through inventories worldwide. Lower industry module pricing, while currently challenging for solar manufacturers (particularly manufacturers with high cost structures), is expected to continue to contribute to global market diversification and volume elasticity. Over time, declining average selling prices are consistent with the erosion of one of the primary historical constraints to widespread solar market penetration, its affordability. In the near term, however, in light of industry-wide manufacturing capacity that exceeds demand, it is uncertain whether growing worldwide demand can absorb industry-wide module supply without further inventory build-up and/or price reductions, which could adversely affect our results of operations. If competitors reduce module pricing to levels below their manufacturing costs, or are able to operate at minimal or negative operating margins for sustained periods of time, our results of operations could be further adversely affected. We continue to mitigate this uncertainty in part by executing on and building our utility-scale systems pipeline as a buffer against demand fluctuations, accelerating

our module efficiency improvements and cost reduction roadmaps to maintain and increase our competitiveness, profitability and capital efficiency, adjusting our production plans and capacity utilization to match our expected demand, and continuing the development of worldwide geographic markets, including those in India, Australia, the Middle East, Latin America, and China.

In the components business, we continue to face intense competition from manufacturers of crystalline silicon solar modules and other types of solar modules and PV systems. Solar module manufacturers compete with one another in several product performance attributes, including reliability and selling price per watt, and, with respect to solar power systems, return on equity ("ROE") and levelized cost of electricity ("LCOE"), meaning the net present value of total life cycle costs of the solar power project divided by the quantity of energy which is expected to be produced over the system's life. We are among the lowest cost PV module manufacturers in the solar industry, based on publicly available information. This cost competitiveness is reflected in the price at which we sell our modules and fully integrated systems and enables our systems to compete favorably in respect of their ROE or LCOE. Our cost competitiveness is based in large part on our proprietary technology (which enables conversion efficiency improvements and enables us to produce a module in less than 2.5 hours using a continuous and highly automated industrial manufacturing process, as opposed to a batch process), our scale, and our operational excellence. In addition, our modules

use approximately 1-2% of the amount of semiconductor material (i.e., silicon) that is used to manufacture traditional crystalline silicon solar modules. The cost of polysilicon is a significant driver of the manufacturing cost of crystalline silicon solar modules, and the timing and rate of change in the cost of silicon feedstock and polysilicon could lead to changes in solar module pricing levels. Polysilicon costs have declined over the past several years, contributing to a decline in our manufacturing cost competitiveness over crystalline silicon module manufacturers. Given the lower conversion efficiency of our modules compared to many types of crystalline silicon modules, there may be higher BoS costs associated with systems using our modules. Thus, to compete effectively on the basis of LCOE, our modules need to maintain a certain cost advantage per watt compared to crystalline silicon-based modules with higher conversion efficiencies. We continue to reduce BoS costs associated with systems using our modules. We believe we can continue to reduce BoS costs by improving conversion efficiency, leveraging volume procurement around standardized hardware platforms, using innovative installation techniques and know how, and accelerating installation times. BoS costs can represent a significant portion of the costs associated with the construction of a typical utility-scale PV solar power system.

While our modules are currently competing in these product performance attributes, there can be no guarantee such competitiveness will continue to exist in the future to the same extent or at all. Any declines in the competitiveness of our products could result in additional margin compression, further declines in the average selling prices of our solar modules, erosion in our market share for modules, decreases in the rate of net sales growth, and/or declines in overall net sales. We have taken, and continue to take, various actions to mitigate the potential impact resulting from competitive pressures, including adjusting our pricing policies as necessary, accelerating progress along our module and BoS cost reduction roadmaps, and focusing our research and development on increasing the conversion efficiency of our solar modules.

As we continue to expand our systems business into sustainable markets, we can offer value beyond the solar module, reduce our exposure to module-only competition, provide differentiated product offerings to minimize the impact of solar module commoditization, and provide comprehensive utility-scale PV systems solutions that significantly reduce solar electricity costs. Thus, our systems business allows us to play a more active role than many of our competitors in managing the demand for our solar modules. Finally, we continue to form and develop strong partner relationships with our customers around the world and continue to develop our range of product offerings, including EPC capabilities and O&M services, in order to enhance the competitiveness of systems using our solar modules.

Certain Trends and Uncertainties

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

Long Term Strategic Plan

In May 2012, we provided information regarding our long term strategic plan (“Long Term Strategic Plan” or “LTSP”) to transition to primarily sustainable opportunities by the end of 2016. In executing the LTSP we are focusing on providing solar PV generation solutions using our modules to sustainable geographic markets that we believe have a compelling need for mass-scale PV electricity, including markets throughout the Americas, Asia, the Middle East, and Africa. As part of our LTSP, we are focusing on opportunities in which our solar PV generation solutions will compete over time directly with fossil fuel offerings on a levelized cost of energy basis. Execution of the LTSP will entail a reallocation of resources around the globe, in particular dedicating resources to regions such as Latin America, Asia, the Middle East, and Africa where we have not traditionally conducted significant business to date. We will evaluate and manage closely the appropriate level of resources required as we transition into and penetrate these specific markets. We intend to dedicate significant capital and human resources to reduce the total installed cost of solar PV generation, to optimize the design and logistics around our solar PV generation solutions, and to ensure that

our solutions integrate well into the overall electricity ecosystem of each specific region.

We expect that, over time, an increasing portion of our consolidated net sales, operating income and cash flows will come from solar offerings in the sustainable markets described above as we execute on our Long Term Strategic Plan, and that, over time, larger relative contributions to our overall financial performance may come from systems offerings in comparison to module only sales. The timing, execution and financial impacts of our Long Term Strategic Plan are subject to risks and uncertainties, as described in the “Risk Factors” in Part I, Item 1A and elsewhere in this report.

We are focusing our resources in those markets and energy applications in which solar power can be a least-cost, best-fit energy solution, particularly in regions with high solar resources, significant current or projected electricity demand and/or relatively high existing electricity prices. As part of these efforts, we are expanding resources globally, including by appointing country heads and supporting professional, sales and other staff in target markets. Accordingly we expect to shift current costs and incur

additional costs over time as we establish a localized business presence in these regions.

We expect joint ventures or other business arrangements with strategic partners to be a key part of our strategy, and we have begun initiatives in several markets to expedite our penetration of those markets and establish relationships with potential customers and policymakers. Some of these business arrangements are expected to involve investments or other allocations of capital on our part. We are in the process of developing relationships with policymakers, regulators, and especially end customers in each of these markets with a view to creating markets for utility scale PV solar power systems. We sell solar power solutions that include our modules directly to end customers, including independent power producers, utilities, retail electric providers and commercial and industrial customers. Depending on the market opportunity, our sales offerings range from third party module-only sales, to module sales with a range of engineering, procurement and construction products and solutions, to full turn-key solar power system sales. We expect these sales offerings to continue to evolve over time as we work with our customers to optimize how our PV solar power solutions can best meet our customers' energy and economic needs.

In order to create or maintain a market position in certain strategically targeted markets our offerings from time to time may need to be priced at levels associated with minimal gross profit margins, which may adversely affect our results of operations.

We expect the profitability associated with our various sales offerings to vary from one another over time, and possibly vary from our internal long-range profitability expectations and targets, depending on the market opportunity and the relative competitiveness of our offering compared with other energy solutions, fossil fuel based or otherwise, that are available to potential customers.

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

We expect a substantial portion of our consolidated net sales, operating income and cash flows through 2014 to be derived from the following four projects in North America, which will be among the world's four largest solar PV power plants: the 550 MW AC Topaz Solar Farm, located in San Luis Obispo County, California; the 550 MW AC Desert Sunlight Solar Farm, located west of Blythe, California; the 290 MW AC Agua Caliente project located in Yuma County, Arizona; and the 230 MW AC AVSR1 project, located just north of Los Angeles, California. Please see the tables under "Management's Discussion and Analysis of Financial Condition and Results of Operations-Financial Operations Overview-Net Sales-Systems Business" for additional information about these and other projects within our systems business advanced stage project pipeline. Construction progress of these projects is subject to risks and delays as described in the "Risk Factors" in Part I, Item 1A and elsewhere in this report. Revenue recognition for these projects is in many cases not linear in nature due to the timing of when all revenue recognition criteria have been or will be met, and consequently period over period comparisons of results of operations may not be meaningful. As we progress towards substantial completion of our four largest PV power plants under construction, which is expected to occur in 2013 through 2015, we expect to have a larger portion of our net sales, operating income and cash flows come from future sales of solar offerings outside of North America, pursuant to our Long Term Strategic Plan described above. North America however, will continue to represent a significant portion of our net sales, operating income and cash flows as a significant portion of our advance stage project pipeline, after excluding the four projects above, is comprised of projects in North America.

Manufacturing Capacity

As of December 31, 2012, we had 28 installed production lines with an annual global manufacturing capacity of approximately 1.9 GW at our manufacturing plants in Perrysburg, Ohio, and Kulim, Malaysia. Our manufacturing operations in Frankfurt (Oder), Germany closed at the end of 2012. Production at one or more of our manufacturing plants has and may in the future be idled temporarily to better align production with expected market demand and to allow us to implement upgraded process technologies as part of our conversion efficiency improvement initiatives.

2008-2009 Manufacturing Excursion

During the period from June 2008 to June 2009, a manufacturing excursion occurred whereby certain modules manufactured during that time period may experience premature power loss once installed in the field. The root cause of the manufacturing excursion was identified and addressed in June 2009. Beginning in 2009, we initiated a voluntary remediation program beyond our standard limited warranty pursuant to which we made commitments to customers with systems containing modules manufactured during the relevant period that we would cover certain costs of remediation efforts. These remediation efforts included module removal, replacement and logistical services and additional compensation payments to customers under certain circumstances. Our best estimate for costs of our voluntary remediation program, as of and in each fiscal period in question, has been based on evaluation and consideration of the then-currently available information, including the estimated number of affected modules in the field, historical experience related to our voluntary remediation efforts, customer-provided data related to potentially affected systems and the estimated costs of performing the logistical services covered under our remediation program.

As we continued remediation efforts under our voluntary remediation program, we learned that, in light of the impracticality of identifying and replacing individual affected models, in order to remediate the energy loss impact at a system level, we are required to remove and replace several modules in the aggregate, including modules that might not have been affected by the manufacturing excursion. Removed modules are returned to us and are further tested to determine if the module can be resold or whether the module should be recycled.

We have expensed $271.2 million total through December 31, 2012 for the estimated costs of remediating systems affected by modules manufactured during the relevant period, including $178.5 million for remediation expenses beyond our limited warranty obligations and $92.7 million in product warranty expense reflecting the net increase in the expected number of replacement modules required in connection with our remediation efforts.

As part of our overall remediation strategy, we have reached commercial settlements with impacted customers mostly during the fourth quarter of 2012 and we expect to reach additional commercial settlements in the future. Such commercial settlements typically include us making a cash payment to a customer in lieu of actually remediating the customer's affected sites and in exchange the customer agrees that no further claims against us related to the manufacturing excursion can be made. The commercial settlements are beneficial to our customers as they benefit from a timely and fair settlement of their claims and we are able to eliminate the risk of uncertainty related to the ultimate cost of actual remediation efforts associated with identifying and replacing individual modules.

For additional information regarding accrued expenses in excess of normal product warranty liability and related expenses, see Note 9. "Consolidated Balance Sheet Details," to our consolidated financial statements included in this Annual Report on Form 10-K. Our voluntary remediation program, and the related manufacturing excursion, also resulted in changes in estimates to our product warranty liability. For additional information regarding these changes, see Note 17. "Commitments and Contingencies," to our consolidated financial statements included in this Annual Report on Form 10-K.

Restructuring

We have undertaken a series of restructuring initiatives as further described in Note 4. "Restructuring," to our consolidated financial statements included in this Annual Report on Form 10-K. In December 2011, February 2012 and April 2012, respectively, we announced restructuring initiatives intended to (i) align the organization with our Long Term Strategic Plan, including expected sustainable market opportunities, (ii) accelerate operating cost reductions and improve overall operating efficiency, and (iii) better align production capacity and geographic location of such capacity with expected geographic market requirements and demand.
Such restructuring initiatives resulted in charges to restructuring expense of $469.1 million in 2012 and $60.4 million in 2011. The most significant actions taken as part of these restructuring activities were the decisions to close our manufacturing operations in Frankfurt (Oder), Germany at the end of 2012 due to the lack of policy support for utility-scale solar projects in Europe and to not proceed with our 4-line manufacturing plant in Vietnam or a 2-line manufacturing plant in France, based upon expected future market demand and our focus on providing utility-scale PV generation solutions primarily to sustainable geographic markets.

The annual cost savings expected from these restructuring initiatives in 2013 and beyond are expected to be between $70 million and $120 million, reducing both cost of sales and selling, general and administrative expenses in approximately equal amounts. The amount of cost savings realized will in part be impacted by the actual capacity utilization in a given year. These cost savings may be offset by increases in operating expenses primarily related to establishing a localized business presence in target markets pursuant to our Long Term Strategic Plan.

System Level Module Performance Warranty

As an alternative to our module power output warranty, we have offered a system level module performance warranty for a limited number of our recent system sales. This system level module performance warranty is designed for utility scale systems and provides 25-year plant-level energy degradation protection. The system level module performance warranty is calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. In resolving claims under the system level module performance warranty to restore the system to warranted performance levels, we first must validate that the root cause is due to module performance, then we typically have the option of either repairing or replacing modules, providing supplemental modules or making a cash payment. Consistent with our module power output warranty, when we elect to satisfy a valid warranty claim by providing replacement or supplemental modules under the systems level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

Currently, only a small percentage of our systems projects are subject to such system level module performance warranty, but we expect that this percentage will increase in the future as we extend it to future systems sales arrangements. We do not anticipate that the system level module performance warranty will have a material impact on our future warranty claim rates, as such warranty is designed to be in line with the expected risk-adjusted aggregate performance of our modules. The offering of such system level warranty addresses the challenge of identifying, from the potential millions of modules installed in a utility scale system, individual modules that are performing below warranty by focusing on the energy generated by the system rather than the capacity of individual modules.

Financial Operations Overview

The following describes certain line items in our statement of operations and some of the factors that affect our operating results.

Net Sales

Components Business

We generally price and sell our solar modules per watt of name-plate power. During 2012, the substantial majority of net sales from the components business was related to modules included in our solar systems described below under "Net Sales — Systems Business." Other than the modules included in our solar power systems, we sold the majority of our solar modules to solar power system project developers, system integrators, and operators headquartered in the United States, Germany, France and India, which either resell our solar modules to end-users or most integrate them into power plants that they own, operate, or sell.

During 2012, most of our supply contracts for the sale of solar modules with certain solar power system project developers and system integrators headquartered within the European Union ("EU Supply Contracts"), were terminated upon mutual consent or expired under their terms. The committed volumes we expect to sell under our remaining EU Supply Contracts are expected to be a minor portion of our consolidated net sales. We have also entered into module sales agreements with customers worldwide for specific projects or volumes of modules. Such agreements are generally not long term in nature. During the year ended December 31, 2012, 10% of our components segment's net sales were denominated in euros and were subject to fluctuations in the exchange rate between the euro and U.S. dollar. Third-party module sales represented approximately 10% of our total 2012 net sales.

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

During 2012, NRG Energy, Inc, Exelon Corporation, and MidAmerican Renewables, LLC individually accounted for more than 10% of our components segment's net sales, which includes the solar modules used in our systems projects. Each of the above customers also represented more than 10% of our consolidated net sales.

Systems Business

Through our fully integrated systems business, we provide a complete turn-key solar power system solution using our solar modules, which may include project development, EPC services, O&M services, and project finance expertise.

Net sales from our systems segment may include the following types of transactions:

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Transaction	Description
Engineer and Procure ("EP") Contract	Design for a customer of a solar electricity generation system that uses our solar modules; includes the procurement of some or all BoS components from third party suppliers.
Engineer, Procure, and Construct ("EPC") Contract	Design and construction for a customer of a turn-key solar electricity generation system that uses our solar modules; includes the procurement of all BoS components from third party suppliers.
Sale of Project Assets	Sale of project assets to a customer at various stages of development. This generally includes a single project consisting of costs incurred for permits, land or land rights, and/or power purchase agreements.
Operating and Maintenance ("O&M") Agreement	Typically a fixed-price long-term services agreement to operate and maintain a solar electricity generating system that we built.

Net sales from our systems segment are impacted by numerous factors, including the competitiveness of our systems offerings in comparison to our competitors' solar systems and other forms of electricity generation, the magnitude and effectiveness of support programs, and other solar power system demand drivers.

During 2011 and 2012, the majority of our systems segment net sales were generated in North America. Net sales from our systems business during 2010 resulted primarily from solar power projects in North America and Europe.

During 2012, the principal customers of our systems segment were NRG Energy, Inc, Exelon Corporation, and MidAmerican Renewables, LLC, each of which also accounted for more than 10% of our total net sales during 2012.

We recognize revenue for arrangements entered into by our systems business generally using two revenue recognition models, following the guidance in ASC 605, Accounting for Long-term Construction Contracts or, for arrangements which include land or land rights, ASC 360, Accounting for Sales of Real Estate. Our revenue recognition policies for the systems business is described further in Note 2. "Summary of Significant Accounting Policies," to our consolidated financial statements included in this Annual Report on Form 10-K.

For systems business sales arrangements that do not include land or land rights and thus are accounted for under ASC 605, we use the percentage-of-completion method using actual costs incurred over total estimated costs to construct a project (including module costs) as our standard accounting policy, unless we cannot make reasonably dependable estimates of the costs to complete the contract, in which case we would use the completed contract method.

For systems business sales arrangements that are accounted for under ASC 360 where we have gained control of land or land rights, we record the sale as revenue only after all revenue recognition criteria have been met, typically using either the percentage-of-completion method or once construction of a project is substantially complete. Revenue recognition for our systems projects is in many cases not linear in nature due to the timing of when all revenue recognition criteria have been met, and consequently period over period comparisons of results of operations may not be meaningful.

Systems project pipeline

The following tables summarize, as of February 26, 2013, our approximately 2.9 GW AC systems business advanced project pipeline. As of December 31, 2012, for the Projects Sold/ Under Contract in our project pipeline of approximately 1.9 GW AC, we have recognized revenue with respect to the equivalent of approximately 679 MW AC. Such MW AC equivalent amount refers to the ratio of revenue recognized for the Projects Sold/ Under Contract in our project pipeline compared to total contracted revenue for such projects, multiplied by the total MW AC for such projects. The remaining revenue to be recognized subsequent to December 31, 2012 for the Projects Sold/Under Contract in our project pipeline is expected to be approximately $4.4 billion. The substantial majority of such amount is expected to be recognized as revenue through the substantial completion dates of the Projects Sold/ Under Contract. The remaining revenue to be recognized does not have a direct correlation to expected remaining module shipments for such Projects Sold/ Under Contract as expected module shipments do not represent total systems revenues and do not consider the timing of when all revenue recognition criteria are met including timing of module installation. Projects are

removed from our project pipeline tables below once we have completed construction and after substantially all revenue has been recognized.

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

Project/Location	Project Size in MW AC (1)	Power Purchase Agreement ("PPA")	Third Party Owner/Purchaser	Expected Substantial Completion Year
Topaz, California	550	PG&E	MidAmerican	2014/ 2015
Sunlight, California	550	PG&E / SCE	NextEra/GE/Sumitomo	2014/ 2015
Agua Caliente, Arizona	290	PG&E	NRG / MidAmerican	2014
AV Solar Ranch One, California	230	PG&E	Exelon	2013
Imperial Energy Center South, California	130	SDG&E	Tenaska (2)	2013
Copper Mountain 2, Nevada	58	PG&E	Sempra (2)	2015 (3)
PNM2, New Mexico	22	UOG (4)	PNM (2)	2013
Walpole, Ontario, Canada	20	OPA (5)	GE/ Alterra	2013
Belmont, Ontario, Canada	20	OPA (5)	GE/ Alterra	2013
Amherstburg 1, Ontario, Canada	10	OPA (5)	GE/ Alterra	2013
DEWA, UAE	13	DEWA	DEWA (2)	2013
Total	1,893			

Projects Permitted with Executed PPA - Not Sold/ Contracted

Project/Location	Project Size in MW AC (1)	Power Purchase Agreement ("PPA")	Expected Substantial Completion Year
Campo Verde, California	139	SDG&E	2013
Macho Springs, New Mexico	50	El Paso Electric	2014
Maryland Solar, Maryland	20	FE Solutions	2013
Lost Hills, California	32	PG&E	2015/ 2016 (7)
Total	241		

Projects in Development with Executed PPA or Awarded Projects - Not Sold/ Contracted

Project/Location	Project Size in MW AC (1)	Power Purchase Agreement ("PPA")	Expected Substantial Completion Year
Stateline, California	300	SCE	2016
Silver State South, Nevada	250	SCE	2016
AGL, Australia (6)	159	AGL (2)	2015
Cuyama, California	40	PG&E	2015/ 2016 (7)
Total	749		

Key:

(1) The volume of modules installed in MW DC ("direct current") will be higher than the MW AC ("alternating current") size pursuant to a DC-AC ratio typically ranging from 1.2-1.4. Such ratio varies across different projects due to various system design factors

(2) EPC contract or partner developed project

(3) First 92 MW AC phase was completed in 2012. Remaining phase is 58 MW AC for which substantial completion is expected in 2015

(4) UOG = Utility Owned Generation

(5) OPA = Ontario Power Authority RESOP program
(6) Subject to financial close and execution of EPC contracts

(7) PPA term does not begin until 2019

Cost of Sales

Components Business

Our cost of sales includes the cost of raw materials and components for manufacturing solar modules, such as tempered back glass, transparent conductive oxide coated front glass, cadmium telluride, laminate, connector assemblies, laminate edge seal, and other items. Our cost of sales also includes direct labor for the manufacturing of solar modules and manufacturing overhead such as engineering, equipment maintenance, environmental health and safety, quality and production control, and procurement costs. Cost of sales also includes depreciation of manufacturing plant and equipment and facility-related expenses. In addition, we accrue shipping, warranty and any obligation for solar module collection and recycling costs within cost of sales.

Our manufacturing cost per watt, which is an operating metric we use as an indicator of manufacturing cost competitiveness, represents the current manufacturing and associated costs incurred to produce and sell solar modules during a period divided by the number of salable watts produced in the same period. For fiscal periods beginning in 2013, our cost per watt will exclude any costs associated with our manufacturing plants in Frankfurt (Oder), Germany, which closed manufacturing operations at the end of 2012.

Overall, we expect our cost per watt to decrease over the next several years due to an increase in watts per solar module, an increase in unit output per production line, and ongoing reductions in variable and fixed costs. This expected decrease in cost per watt would be partially offset during periods in which we underutilize manufacturing capacity.

Systems Business

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

As further described in Note 25. “Segment and Geographical Information,” to our consolidated financial statements included within this Annual Report on Form 10-K, at the time when all revenue recognition criteria are met, we include the sale of our solar modules manufactured by our components business and used by our systems business within net sales of our components business. Therefore, the related cost of sales are also included within our components business at that time. The cost of solar modules is comprised of the manufactured inventory cost incurred by our components segment.

Gross Profit

Gross profit is affected by numerous factors, including our module and system average selling prices, market demand, market mix, our manufacturing costs, BoS costs, project development costs, the effective utilization of our production facilities, and foreign exchange rates. Gross profit is also affected by the mix of net sales generated by our components and systems businesses. Gross profit for our systems business excludes the sales and cost of sales for solar modules, which we include in the gross profit of our components business.

Research and Development

Research and development expense consists primarily of salaries and personnel-related costs, the cost of products, materials, and outside services used in our process and product research and development activities for both the components and systems businesses. We acquire equipment for general use in our process and product development and record the depreciation of this equipment as research and development expense. Currently, the substantial majority of our research and development expenses are attributable to our components segment.

We maintain a number of programs and activities to improve our technology and processes in order to enhance the performance and reduce the costs of our solar modules and PV systems using our modules.

Selling, General and Administrative

Selling, general and administrative expense consists primarily of salaries and other personnel-related costs, professional fees, insurance costs, travel expenses, and other selling expenses. We expect selling, general and administrative expense to decline over time as we reduce operating costs in connection with our restructuring activities, which is a component of our Long Term Strategic

Plan.

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

Production Start-Up

Production start-up expense consists primarily of salaries and personnel-related costs and the cost of operating a production line before it has been qualified for full production, including the cost of raw materials for solar modules run through the production line during the qualification phase. It also includes all expenses related to the selection of a new site and the related legal and regulatory costs, and the costs to maintain our plant replication program, to the extent we cannot capitalize these expenditures. In general, we expect production start-up expense per production line to be higher when we build an entirely new manufacturing facility compared with the addition of new production lines at an existing manufacturing facility, primarily due to the additional infrastructure investment required when building an entirely new facility. Production start-up expense is attributable to our components segment.

Goodwill Impairment

During the fourth quarter of 2011, we determined that goodwill related to our components segment was impaired and recorded expense of $393.4 million. During 2010 and 2012, we had no goodwill impairments.

Restructuring

We have undertaken a series of restructuring initiatives as further described in Note 4. “Restructuring,” to our consolidated financial statements included in this Annual Report on Form 10-K. In December 2011, February 2012 and April 2012, respectively, we announced restructuring initiatives intended to (i) align the organization with our Long Term Strategic Plan, including expected sustainable market opportunities, (ii) accelerate operating cost reductions and improve overall operating efficiency, and (iii) better align production capacity and geographic location of such capacity with expected geographic market requirements and demand.
Such restructuring initiatives resulted in charges to restructuring expense of $469.1 million in 2012 and $60.4 million in 2011. The most significant actions taken as part of these restructuring activities were the decisions to close our manufacturing operations in Frankfurt (Oder), Germany at the end of 2012 due to the lack of policy support for utility-scale solar projects in Europe and to not proceed with our 4-line manufacturing plant in Vietnam or a 2-line manufacturing plant in France, based upon expected future market demand and our focus on providing utility-scale PV generation solutions primarily to sustainable geographic markets.

The annual cost savings expected from these restructuring initiatives in 2013 and beyond are expected to be between $70 million and $120 million, reducing both cost of sales and selling, general and administrative expenses in approximately equal amounts. The amount of cost savings realized will in part be impacted by the actual capacity utilization in a given year. These cost savings may be offset by increases in operating expenses primarily related to

establishing a localized business presence in target markets pursuant to our Long Term Strategic Plan.

Foreign Currency Gain (Loss)

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

Interest Income

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

Interest Expense, Net

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

Other income (expense), net

Other income (expense) is primarily comprised of changes in fair value of foreign exchange contracts and realized gains/losses on the sale of fixed income investments.

Income Tax Expense

Income taxes are imposed on our income by taxing authorities in the various jurisdictions in which we operate, principally the United States, Germany, and Malaysia. The statutory federal corporate income tax rate in the United States is 35.0%, while the tax rates in Germany and Malaysia are approximately 29.3% and 25.0%, respectively. In Malaysia, we have been granted a long-term tax holiday, scheduled to expire in 2027, pursuant to which substantially all of our income earned in Malaysia is exempt from income tax.

Critical Accounting Estimates

In preparing our financial statements in conformity with generally accepted accounting principles in the United States ("GAAP"), we make estimates and assumptions about future events that affect the amounts of reported assets, liabilities, revenues and expenses, as well as the disclosure of contingent liabilities in our financial statements and the related notes thereto. Some of our accounting policies require the application of significant judgment by management in the selection of the appropriate assumptions for making these estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We base our judgments and estimates on our historical experience, our forecasts, and other available information, as appropriate. Our significant accounting policies are described in Note 2. "Summary of Significant Accounting Policies," to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

Our critical accounting estimates, which require the most significant management estimates and judgment in determining amounts reported in our consolidated financial statements included in this Annual Report on Form 10-K, are as follows:

Revenue Recognition - Percentage-of-Completion Method. We recognize revenue for arrangements entered into by our systems business generally using two revenue recognition models, following the guidance in ASC 605, Accounting for Long-term Construction Contracts or, for arrangements which include land or land rights, ASC 360, Accounting for Sales of Real Estate. For systems business sales arrangements that do not include land or land rights and thus are accounted for under ASC 605, we use the percentage-of-completion method as our standard accounting policy, unless we cannot make reasonably dependable estimates of the costs to complete the contract, in which case we would use the completed contract method. We also apply the percentage-of-completion method to certain sales arrangements covered under ASC 360 only after a sale has been consummated, we have transferred the usual risks and rewards of ownership to the buyer, the initial and continuing investment criteria have been met, we have the ability to estimate our costs and progress toward completion, and all other revenue recognition criteria have been met.

In applying the percentage-of-completion method we use the actual costs incurred relative to estimated costs to complete (including modules) in order to estimate the progress towards completion to determine the amount of revenue and profit to recognize. Incurred costs include all installed direct materials, installed solar modules, labor,

subcontractor costs, and those indirect costs related to contract performance, such as indirect labor, supplies, and tools. We recognize direct material and solar module costs as incurred costs when the direct materials and solar modules have been installed in the project. When contracts specify that title to direct materials and solar modules transfers to the customer before installation has been performed, we will not recognize revenue or associated costs until those materials are installed and have met all other revenue recognition requirements. We consider direct materials and solar modules to be installed when they are permanently attached or fitted to the solar power systems as required by engineering designs. Solar modules that will be used in our solar power systems, which we still hold title to, remain within inventory until such modules are installed in a solar power system.

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

If estimated total costs on any contract are greater than the contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of the revisions to estimates related to contract revenues and costs to complete contracts, including penalties, incentive awards, claims, change orders, anticipated losses and others are recorded in the period in which the revisions to estimates are identified and the loss can be reasonably estimated. Such revisions could occur in any reporting period and the effects may be material depending on the size of the contract or the adjustment.

Accrued Solar Module Collection and Recycling Liability. At the time of sale, we recognize an expense for the estimated cost of our future obligation for collecting and recycling solar modules sold that are covered by our collection and recycling program. We estimate the cost of our collection and recycling obligations based on the present value of the expected probability weighted future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging the solar modules for transport, the cost of freight from the solar module installation sites to a recycling center, the material, labor, capital costs and scale of recycling centers, and an estimated third-party profit margin and return on risk for collection and recycling services. We base this estimate on our experience collecting and recycling our solar modules and on our expectations about future developments in recycling technologies and processes, about economic conditions at the time the solar modules will be collected and recycled, and about the expected timing of when our solar modules will be returned for recycling. In the periods between the time of our sales and the settlement of our collection and recycling obligations, we accrete the carrying amount of the associated liability by applying the discount rate used for its initial measurement. During the fourth quarter of 2012, we completed an annual cost study and updated our estimates for the expected future collection and recycling costs and we adjusted our module collection and recycling liability accordingly. At December 31, 2012, our estimated liability for collecting and recycling solar modules covered by our collection and recycling program was $212.8 million. A 10% change in our estimate of the future cost of collecting and recycling a solar module would change this estimated liability by $21.3 million.

Product Warranties and Manufacturing Excursions. We provide a limited warranty against defects in materials and workmanship under normal use and service conditions for 10 years following delivery to the owners of our solar modules

We also typically 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 labeled power output rating during the first 10 years following their installation and at least 80% of their labeled 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 modules or, under the power output warranty, providing additional solar modules to remedy the power shortfall. We also have the option to make a payment for the then current market price for solar modules to resolve claims. Our warranties are automatically transferred from the original purchasers of our solar modules to subsequent purchasers upon resale.

As an alternative to our module power output warranty, we have offered a system level module performance warranty for a limited number of our recent system sales. This system level module performance warranty is designed for utility scale systems and provides 25-year plant-level energy degradation protection. The system level module performance warranty typically is calculated as a percentage of a system’s expected energy production, adjusted for certain actual site conditions, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. In resolving claims under the system level module performance warranty to restore the system to warranted performance levels, we first must validate that the root cause is due to module performance, then we typically have the option of either repairing or replacing modules, providing supplemental modules or making a cash payment. Consistent with our module power output warranty, when we elect to satisfy a valid warranty claim by providing replacement or supplement modules under the system level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

In addition to our solar module warranty described above, for solar power plants built by our systems business, we typically provide a limited warranty on the balance of the system against defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a phase or the entire solar power plant. In resolving claims under the engineering design, installation, and workmanship warranties, we have the option of remedying the defect through repair, or replacement.

When we recognize revenue for module or systems project sales, we accrue a liability for the estimated future costs of meeting our limited warranty obligations. We make and revise these estimates based primarily on the number of our solar modules under warranty installed at customer locations, our experience with warranty claims, our monitoring of field installation sites, our internal testing of and the expected future performance of our solar modules and BoS components, and our estimated per-module replacement cost. Such estimates have changed, and may in the future change, based primarily upon historical experience including additional information received from the evaluation of warranty claims and the complete processing of such claims.

We also make an estimate for the costs of any voluntary remediation programs including our 2008-2009 manufacturing excursion. Our estimate for remediation costs for our 2008-2009 manufacturing excursion is based on evaluation and consideration

of currently available information, including the estimated number of affected modules in the field, historical experience related to our remediation efforts, customer-provided data related to potentially affected systems, the estimated costs of performing any remediation services, and the post-sale expenses covered under our remediation program. From time to time, we have taken remediation actions in respect of affected modules beyond our limited warranty, and we may elect to do so in the future, in which case we would incur additional expenses that are beyond our limited warranty. If we commit to any such remediation actions beyond our limited warranty, developing our estimates for such remediation actions may require significant management judgment.

At December 31, 2012, our accrued liability for product warranty was $191.6 million. We have historically estimated our product warranty liability for power output and defects in materials and workmanship under normal use and service conditions to have an estimated warranty return rate of approximately 3% of modules covered under warranty. A 1 percentage point change in the estimated warranty return rate would change our estimated product warranty liability by approximately $46 million.

Accounting for Income Taxes. We are subject to the income tax laws of the United States, and its states and municipalities and those of the foreign jurisdictions in which we have significant business operations. These tax laws are complex and subject to different interpretations by the taxpayer and the relevant governmental taxing authorities. We must make judgments and interpretations about the application of these inherently complex tax laws when determining our provision for income taxes and must also make estimates about when in the future certain items affect taxable income in the various tax jurisdictions. Disputes over interpretations of the tax laws may be settled with the taxing authority upon examination or audit. We regularly assess the likelihood of assessments in each of the taxing jurisdictions resulting from current and subsequent years' examinations, and we record tax liabilities as appropriate. We establish liabilities for potential additional taxes that may arise out of tax audits in accordance with ASC 740, Income Taxes. Once established, we adjust the liabilities when additional information becomes available or when an event occurs requiring an adjustment. Significant judgment is required in making these estimates and the actual cost of a legal claim, tax assessment, or regulatory fine or penalty may ultimately be materially different from our recorded liabilities, if any.
In preparing our consolidated financial statements, we calculate our income tax expense based on our interpretation of the tax laws in the various jurisdictions where we conduct business. This requires us to estimate our current tax obligations and the realizability of uncertain tax positions and to assess temporary differences between the financial statement carrying amounts and the tax basis of assets and liabilities. These temporary differences result in deferred tax assets and liabilities, the net current amount of which we show as a component of current assets or current liabilities and the net noncurrent amount of which we show as other assets or other liabilities on our consolidated balance sheets.

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

We also consider the earnings of our foreign subsidiaries and determine whether such amounts are indefinitely reinvested outside the United States. We have concluded that, except for the earnings of our Canadian subsidiary and with respect to previously taxed income, all such accumulated earnings are currently indefinitely reinvested. Accordingly, no additional taxes have been accrued that might be incurred if such amounts were repatriated to the United States. If our intention to indefinitely reinvest the earnings of our foreign subsidiaries changes, additional taxes may be required to be accrued. See Note 21. "Income Taxes," to our consolidated financial statements included in this Annual Report on Form 10-K for additional information.

Long-Lived Asset Impairment. We are required to assess the recoverability of the carrying value of long-lived assets when an indicator of impairment has been identified. We review our long-lived assets each reporting period to assess whether impairment indicators are present. We must exercise judgment in assessing whether an event indicating potential impairment has occurred.

For purposes of recognition and measurement of an impairment loss, a long-lived asset or assets is grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. We must exercise judgment in assessing the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities.

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

of capacity and the expected timing of placing this capacity back into production.

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

Our estimates are based upon historical experience, our commercial relationships, and available information about future trends. We believe fair value assessments are most sensitive to market changes and the corresponding impact on volume and average selling prices and that these are more subjective than manufacturing cost and other assumptions. We believe our current assumptions and estimates are reasonable and appropriate.

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

We may first make a qualitative assessment of whether it is more-likely-than-not that a reporting unit’s fair value is less than its carrying value to determine whether it is necessary to perform the two-step goodwill impairment test. The qualitative impairment test includes considering various factors including macroeconomic conditions, industry and market conditions, cost factors, a sustained share price or market capitalization decrease, and any reporting unit specific events. If it is determined through the qualitative assessment that a reporting unit’s fair value is more-likely-than-not greater than its carrying value, the two-step impairment test is not required. If the qualitative assessment indicates it is more-likely-than-not that a reporting unit’s fair value is not greater than its carrying value, we must perform the two-step impairment test. We may also elect to proceed directly to the two-step impairment test without considering such qualitative factors.

The first step in a two-step impairment test is the comparison of the fair value of a reporting unit to its carrying amount, including goodwill. Our two reporting units are the components and systems reporting units, which are the same as our reportable segments. In accordance with the authoritative guidance over fair value measurements, we define the fair value of a reporting unit as the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. We primarily use the income approach methodology of valuation, which includes the discounted cash flow method, and the market approach methodology of valuation, which considers values of comparable businesses to estimate the fair values of our reporting units. We do not believe that a cost approach is relevant to measuring the fair values of our reporting units.

Significant management judgment is required when estimating the fair value of our reporting units including the forecasting of future operating results, the discount rates and expected future growth rates that we use in the discounted cash flow method of valuation, and in the selection of comparable businesses that we use in the market approach. If the estimated fair value of the reporting unit exceeds the carrying value assigned to that unit, goodwill is not impaired and no further analysis is required.

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

Reportable Segment Allocations. ASC 280, Segment Reporting, establishes standards for companies to report in their financial statements information about operating segments, products, services, geographic areas, and major customers. The method of determining what information to report is generally based on the way that management organizes the operating segments within the Company for making operating decisions and assessing financial performance.

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules which convert sunlight into electricity. Third-party customers of our components segment include project developers, system integrators, and operators of renewable energy projects.

Our second segment is our fully integrated systems business ("systems segment"), through which we provide complete turn-key PV solar power systems, or solar solutions that draw upon our capabilities, which include (i) project development, (ii) engineering, procurement, and construction ("EPC") services, (iii) operating and maintenance ("O&M") services, and (iv) project finance expertise. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems which use our solar modules, and such products and services are sold directly to investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners.

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

After we have determined the amount of revenue earned for our systems projects following the applicable accounting guidance for the underlying sales arrangements, we allocate module revenue from the systems segment to the components segment based on how our CODM strategically views these segments. The amount of module revenue allocated from the systems segment to the components segment is equal to an estimated average selling price for such solar modules as if the modules were sold to a third party EPC customer through a long term supply agreement that establishes pricing at the beginning of each year. In order to develop the estimate of the average selling price used for this revenue allocation, we utilize a combination of our actual third party module sale transactions, our competitor benchmarking and our internal pricing lists used to provide module price quotes to customers. This allocation methodology and the estimated average selling prices are consistent with how our CODM views the value proposition our components business brings to a utility scale systems project and the financial information reviewed by our CODM in assessing our components business performance.

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

See Note 25. "Segment and Geographical Information," to our consolidated financial statements included in this Annual Report on Form 10-K for more information.

Results of Operations

The following table sets forth our consolidated statements of operations as a percentage of net sales for the years ended December 31, 2012, December 31, 2011, and December 31, 2010:

	Years Ended					
	December 31, 2012		December 31, 2011		December 31, 2010	
Net sales	100.0	%	100.0	%	100.0	%
Cost of sales	74.7	%	64.9	%	53.8	%
Gross profit	25.3	%	35.1	%	46.2	%
Research and development	3.9	%	5.1	%	3.7	%
Selling, general and administrative	8.3	%	14.9	%	12.5	%
Production start-up	0.2	%	1.2	%	0.8	%
Goodwill impairment	—	%	14.2	%	—	%
Restructuring	13.9	%	2.2	%	—	%
Operating (loss) income	(1.1	)%	(2.5	)%	29.2	%
Foreign currency (loss) gain	(0.1	)%	—	%	(0.1	)%
Interest income	0.4	%	0.5	%	0.6	%
Interest expense, net	(0.4	)%	—	%	—	%
Other income (expense), net	—	%	—	%	0.1	%
Income tax expense (benefit)	1.7	%	(0.5	)%	3.8	%
Net (loss) income	(2.9	)%	(1.4	)%	26.0	%

Segment Overview

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar modules which convert sunlight into electricity. Third-party customers of our components segment include project developers, system integrators, and operators of renewable energy projects.

Our second segment is our fully integrated systems business (“systems segment”), through which we provide complete turn-key PV solar power systems, or solar solutions that draw upon our capabilities, which include (i) project development, (ii) engineering, procurement, and construction (“EPC”) services, (iii) operating and maintenance (“O&M”) services, and (iv) project finance expertise. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems which use our solar modules, and such products and services are sold directly to investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners.

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

See Note 25. “Segment and Geographical Information,” to our consolidated financial statements included in this Annual Report on Form 10-K.

See also Part II, Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations - Financial Operations Overview - Net Sales - Systems Project Pipeline” for a description of the projects in our systems project pipeline. Due to the distinct size and terms of the underlying sales arrangements for each project under construction, timing of revenue recognition may create uneven net sales patterns, making year over year comparisons less meaningful.

Product Revenue

The following table sets forth the total amounts of solar modules and solar power systems net sales for the years ended December 31, 2012, December 31, 2011 and December 31, 2010. For the purpose of the following table, (a) “solar module revenue” is composed of total net sales from the sale of solar modules to third parties, and (b) “solar power systems revenue” is composed of total net sales from the sale of complete solar power systems and related services including the solar modules installed in the solar power systems.

(Dollars in thousands)	2012	2011	2010
Solar module revenue	$325,427	$1,523,695	$1,986,746
Solar power system revenue	3,043,118	1,242,512	576,769
Net sales	$3,368,545	$2,766,207	$2,563,515

Fiscal Years Ended December 31, 2012 and December 31, 2011

Net Sales

	Years Ended		Year Over	
(Dollars in thousands)	2012	2011	Year Change	
Net Sales (Segment Profile)				
Components	$1,185,958	$1,941,583	$(755,625)	(39)%
Systems	2,182,587	824,624	1,357,963	165 %
Total	$3,368,545	$2,766,207	$602,338	22 %

The 22% increase in net sales for 2012 compared to 2011 was primarily due to a 165% increase in net sales by our systems segment, which was partially offset by a 39% decrease in net sales from our components segment.

Net sales from our systems segment, which excludes solar modules used in our systems projects, increased by $1,358 million, primarily due to increases in net sales from our AV Solar Ranch One, Topaz, Copper Mountain 2, St. Clair, Silver State North, Alpine, Imperial Energy Center South, and Avra Valley projects, partially offset by decreases in net sales from our Agua Caliente, Amherstburg 2, Santa Teresa and Paloma projects. The increase in net sales is due to the number and size of projects under construction between the periods as well as the timing of when all revenue recognition criteria have been met.

Net sales from our components segment decreased $756 million primarily due to a 33% decrease in module average selling prices, including modules used in our systems projects, and an 8% decrease in the volume of watts sold.

Cost of Sales

	Years Ended		Year Over	
(Dollars in thousands)	2012	2011	Year Change	
Cost of Sales				
Components	$1,130,196	$1,275,439	$(145,243)	(11)%
Systems	$1,385,600	$519,017	$866,583	167 %
Cost of sales	$2,515,796	$1,794,456	$721,340	40 %
% of net sales	74.7 %	64.9 %		

The 40% increase in cost of sales during the year ended December 31, 2012 compared with the year ended December 31, 2011 was primarily due to an $867 million increase in our systems segment primarily for BoS and other construction costs related to an increase in the number and size of various utility-scale solar power systems under construction between the periods.

These increases were partially offset by a decrease in cost of sales for our components segment of $145 million including decreases of $168.3 million due to a reduction in the volume of solar modules sold and continuous cost reductions in our manufacturing process and a $80.1 million reduction in expense for costs associated with voluntary remediation efforts related to our June 2008 - June 2009 manufacturing excursion. These component segment decreases were partially offset by a $44.3 million increase related to the underutilization of our manufacturing capacity primarily related to the idling of manufacturing lines in Perrysburg, Malaysia and Germany during portions of 2012, a $25.3 million increase for certain lower of cost or market inventory write-downs primarily as a result of

declines in market pricing, a $18.3 million increase related to accelerated deprecation for certain manufacturing equipment that will be replaced as part of our planned equipment upgrade programs, and a $15.8 million increase in expense for costs associated with voluntary remediation efforts for a workmanship issue affecting a limited number of solar modules manufactured between October 2008 and June 2009.

Our average manufacturing cost per watt declined by $0.02 per watt, or 3%, from $0.75 in 2011 to $0.73 in 2012 and included $0.01 of non-cash stock based compensation. The decrease is the result of increased module conversion efficiencies realized, partially offset by increased underutilization during the year ended December 31, 2012.

Gross Profit

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Gross profit	$852,749		$971,751		$(119,002)	(12)	%
% of net sales	25.3	%	35.1	%			

Gross profit as a percentage of net sales decreased by 9.8 percentage points in 2012 compared with 2011. This decrease was primarily attributable to a 21.1 percentage point decrease due to lower third-party module average selling prices and volumes, a 1.3 percentage point decrease related to plant underutilization, a 0.6 percentage point decrease resulting from lower of cost or market inventory write-downs due to declines in market pricing during the year ended December 31, 2012, a 1.6 percentage point decrease due to lower module gross profit for modules used in our systems projects, a 0.5 percentage point decrease due to accelerated depreciation on certain manufacturing equipment that have been replaced as part of our planned equipment upgrade programs and a 0.5 percentage point decrease related to costs associated with voluntary remediation efforts for a workmanship issue potentially affecting a limited number of solar modules manufacturing between October 2008 and June 2009. The decreases were partially offset by a 12.6 percentage point increase in systems segment gross profit due to the mix of higher gross profit projects under construction between the periods and a 3.2 percentage point increase related to reduced costs associated with voluntary remediation efforts for our June 2008 to June 2009 manufacturing excursion.

Research and Development

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Research and development	$132,460		$140,523		$(8,063)	(6)	%
% of net sales	3.9	%	5.1	%			

The decrease in research and development expense of $8.1 million was primarily due to a $10.7 million decrease in personnel-related expenses primarily driven by decreases in share-based compensation expense of $7.8 million. Additionally, facilities expense decreased by $1.5 million for the year ended December 31, 2012 compared to the year ended December 31, 2011. For 2012, share based compensation expense decreased from 2011, primarily as a result of the impact of an increase in our actual forfeitures primarily due to restructuring activities and an increase in the estimated forfeiture rate for share based compensation awards during 2012. These decreases were partially offset by a $0.4 million increase in testing and qualification materials costs and a $3.7 million increase in other expenses, which included non-capital projects and the disposal of miscellaneous property, plant and equipment.

During 2012 we continued the development of our solar module technology by increasing the conversion efficiency of our modules from 11.9% in 2011 to 12.6% in 2012.

Selling, General and Administrative

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Selling, general and administrative	$280,928		$412,541		$(131,613)	(32)	%
% of net sales	8.3	%	14.9	%			

The decrease in selling, general and administrative expense of $131.6 million was primarily due to a $73.7 million decrease in salaries and personnel-related expenses, primarily driven by a decrease in share-based compensation expense of $55.5 million. For the year ended December 31, 2012, share-based compensation expense decreased from the year ended December 31, 2011, primarily as a result of the impact of an increase in our actual forfeitures primarily due to restructuring activities and an increase in the estimated forfeiture rate for share-based compensation awards.

There was also a $21.2 million decrease in project development and selling costs, a $12.0 million decrease in professional service costs, a $10.5 million decrease in allowance for doubtful accounts expense, a $2.5 million decrease due to a reduction in travel expense, and a $24.4 million decrease due to lower expense in 2012 related to the June 2008 to June 2009 manufacturing excursion. These decreases were partially offset by a $9.3 million increase in infrastructure expenses relating to the early termination of certain leases and increased depreciation, and a $3.3 million increase in other expenses relating to the disposal of miscellaneous property, plant and equipment.

Production Start-Up

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Production start-up	$7,823		$33,620		$(25,797)	(77)	%
% of net sales	0.2	%	1.2	%			

During 2012, we incurred $7.8 million of production start-up expenses primarily for our global manufacturing personnel dedicated to the installation and implementation of new equipment, equipment upgrades and process improvements for existing plants as well as certain expenses related to our previously planned manufacturing capacity expansions in Vietnam and Arizona. During 2011, we incurred $33.6 million of production start-up expenses primarily for manufacturing capacity expansions in Malaysia and Germany and our previously planned manufacturing expansions in France, Vietnam, and Arizona.

Goodwill impairment

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Goodwill impairment	$—		$393,365		$(393,365)	(100)	%
% of net sales	—	%	14.2	%			

We determined the implied fair value of goodwill in the components reporting unit was zero as of December 31, 2011. As a result, we impaired all of the goodwill in the components reporting unit in 2011 and recorded $393.4 million of impairment expense. During 2012, there were no impairments of goodwill.

See Note 6. “Goodwill and Intangible Assets,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

Restructuring

(Dollars in thousands)	Years Ended 2012		2011		Year Over Year Change		
Restructuring	$469,101		$60,366		$408,735	677	%
% of net sales	13.9	%	2.2	%			

During 2012 and 2011, we incurred $469.1 million and $60.4 million of restructuring expenses, respectively, due to charges relating to a series of restructuring initiatives, as further described in Note 4. “Restructuring,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

Foreign currency (loss) gain

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change		
Foreign currency (loss) gain	$(2,122)	$995	$(3,117)	(313)	%

Foreign currency loss increased during 2012 compared with 2011 primarily due to differences in foreign currency denominated assets and liabilities and differences in exchange rates primarily related to the Euro and Malaysian Ringgit.

Interest Income

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change		
Interest income	$12,824	$13,391	$(567)	(4)	%

Interest income decreased during 2012 compared with 2011 primarily as a result of a reduction in interest received on long-term marketable securities and restricted investments during 2012.

Interest Expense, Net

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change	
Interest expense, net	$(13,888)	$(100)	$(13,788)	13,788 %

Interest expense, net of amounts capitalized, increased during 2012 compared with 2011, primarily due to $4.7 million in expense during the year ended December 31, 2012 associated with the repayment of the German Facility Agreement. The remaining increase is primarily related to an increase in average long-term debt between the periods. The remaining increase was primarily due to a reduction in the amount of assets under construction and project assets that qualify for capitalized interest during the year ended December 31, 2012 compared to the year ended December 31, 2011, increasing interest expense, net.

Interest expense is incurred on various debt financings. We capitalize interest expense into our property, plant and equipment or project assets when such costs qualify for interest capitalization, reducing the amount of interest expense reported in any given reporting period. See also Note 9. “Consolidated Balance Sheet Details,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

Other Income (Expense), Net

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change	
Other income (expense), net	$945	$665	$280	42 %

Other income, net, increased during 2012 compared with 2011, primarily as a result of timing differences for amounts included in other income, net.

(Loss) Income Before Income Taxes (Segment Profit)

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change	
(Loss) income before income taxes (Segment profit)				
Components	$(687,767)	$(24,451)	$(663,316)	2,713 %
Systems	647,963	(29,262)	677,225	(2,314)%
Total	$(39,804)	$(53,713)	$13,909	(26)%

Components segment loss before income taxes increased by $663.3 million, during 2012 compared with 2011, primarily from expenses relating to a series of restructuring initiatives, lower net sales which resulted from a decrease in both average selling prices and volumes, inventory write-downs, and underutilization charges, partially offset by decreased expense associated with our voluntary remediation efforts for our June 2008 to June 2009 manufacturing excursion.

Systems segment income (loss) before income taxes increased $677.2 million, during 2012 compared with 2011, primarily due to increased systems segment revenue during 2012 compared with 2011, due to an increase in the number and size of projects under construction for which all revenue recognition criteria were met.

Income Tax (Benefit) Expense

(Dollars in thousands)	Years Ended 2012	2011	Year Over Year Change	
Income tax expense (benefit)	$56,534	$(14,220)	$70,754	(498)%
Effective tax rate	(142.0)%	26.5 %		

Income tax expense increased by $70.8 million during 2012 compared with 2011. The increase in income tax expense in 2012 compared to 2011 was primarily attributable to the establishment of valuation allowances against previously established deferred tax assets in certain foreign jurisdictions, operating losses generated in jurisdictions for which no tax benefit is recorded, and a greater percentage of profits earned in higher tax jurisdictions. See Note 21. “Income Taxes,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K for additional information.

Fiscal Years Ended December 31, 2011 and December 31, 2010

Net Sales

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change		
Net Sales (Segment Profile)					
Components	$1,941,583	$2,284,646	$(343,063)	(15)	%
Systems	824,624	$278,869	545,755	196	%
Total	$2,766,207	$2,563,515	$202,692	8	%

The 8% increase in net sales for 2011 compared to 2010 was due to a 196% increase in net sales in our systems segment partially offset by a 15% decrease in net sales from our components segment.

Net sales from our components segment, which includes solar modules used in our systems projects, decreased by $343.1 million primarily due to a 15% decrease in average selling prices, partially offset by increases in the volume of watts sold.

Net sales from our systems segment, which excludes solar modules used in our systems projects increased by $545.8 million primarily due to increases in net sales from our Agua Caliente, Santa Teresa, Amherstburg 2 and Paloma projects, partially offset by decreases in net sales from the Sarnia 2, Copper Mountain 1 and Cimarron projects between the periods. The increase in net sales is primarily due to the number and size of projects under construction for which all revenue recognition criteria were met between the periods.

Cost of Sales

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change		
Cost of Sales					
Components	$1,275,439	$1,069,501	$205,938	19	%
Systems	519,017	309,168	209,849	68	%
Total	$1,794,456	$1,378,669	$415,787	30	%
% of net sales	65 %	54 %			

Component segment cost of sales increased $205.9 million, or 19% during 2011 compared with 2010, primarily due to higher production and sales volumes and due to increased expense associated with voluntary remediation efforts related to the June 2008 to June 2009 manufacturing excursion.

Systems segment cost of sales increased $209.8 million, or 68% during 2011 compared with 2010, primarily due to an increase in the number of utility-scale solar power projects under construction in North America between these periods.

Our average manufacturing cost per watt declined by $0.02 per watt, or 3%, from $0.77 in 2010 to $0.75 in 2011 and included $0.01 of non-cash stock based compensation.

Gross Profit

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change		
Gross profit	$971,751	$1,184,846	$(213,095)	(18)	%
% of net sales	35.1 %	46.2 %			

Gross profit as a percentage of net sales decreased by 11.1 percentage points in 2011 compared with 2010. This decrease was attributable to the following: a 5.9 percentage point reduction due to a decline in our total module ASP and mix between our components and systems segments, a 4.8 percentage point reduction relating to costs associated with our June 2008 to June 2009 manufacturing excursion, a 1.8 percentage point reduction due to an increase in expected warranty claims for potential module performance in certain climates, and a 0.6 percentage point reduction due to inventory write-downs. These decreases were partially offset by a 1.9 percentage point increase attributable to continued manufacturing scale and reductions in our manufacturing cost per watt, and a 0.1 percentage point increase due to the weakening of the euro against the U.S. dollar exchange rate.

Research and Development

(Dollars in thousands)	Years Ended 2011		2010		Year Over Year Change		
Research and development	$140,523		$94,797		$45,726	48	%
% of net sales	5.1	%	3.7	%			

The increase in research and development expense was primarily due to a $19.3 million increase in personnel-related expenses (including a $4.5 million increase in share-based compensation expense) resulting from hiring for increased investment in various research and development projects, a $25.6 million increase in testing and qualification material cost, and a $2.3 million increase in facilities and utilities expenses. These increases were partially offset by a decrease in other expenses of $1.5 million.

During 2011 we continued the development of our solar module technology by increasing the conversion efficiency of our modules from 11.3% in 2010 to 11.9% in 2011.

Selling, General and Administrative

(Dollars in thousands)	Years Ended 2011		2010		Year Over Year Change		
Selling, general and administrative	$412,541		$321,704		$90,837	28	%
% of net sales	14.9	%	12.5	%			

The increase in selling, general and administrative expense in 2011 compared to 2010 was primarily due to a $34.8 million increase in estimated compensation payments to customers, under certain circumstances, for power lost prior to the remediation of the customer's system under our manufacturing excursion remediation program discussed above, a $15.2 million increase in infrastructure spending partially related to the implementation of a new ERP system, a $14.5 million increase in salaries and personnel-related expenses (including a $1.5 million increase in share-based compensation expense), a $10.5 million increase in allowance for doubtful accounts expense, an $8.6 million increase in expenses related to the development of systems projects and new markets, and a $7.3 million increase in expenses related to professional fees, facilities, and other operating expenses.

Production Start-Up

(Dollars in thousands)	Years Ended 2011		2010		Year Over Year Change		
Production start-up	$33,620		$19,442		$14,178	73	%
% of net sales	1.2	%	0.8	%			

During 2011, we incurred $33.6 million of production start-up expenses primarily due to manufacturing expansion or previously planned manufacturing expansion activity in Germany, Malaysia, Vietnam, France, and Arizona, including legal, regulatory and personnel costs, compared with $19.4 million of production start-up expenses for manufacturing expansion activity in Malaysia, France, Ohio, and Germany during 2010. Production start-up expenses are comprised of the cost of labor, material, and depreciation expense to run and qualify the production lines, related facility expenses, management of our replication process, and legal and regulatory costs.

Goodwill impairment

(Dollars in thousands)	Years Ended 2011		2010		Year Over Year Change		
Goodwill impairment	$393,365		$—		$393,365	100	%
% of net sales	14.2	%	—	%			

We determined the implied fair value of goodwill in the components reporting unit to be $0 as of December 31, 2011. As a result, we impaired all of the goodwill in the components reporting unit and recorded $393.4 million of impairment expense in 2011.

See Note 6. “Goodwill and Intangible Assets,” to our consolidated financial statements for the year ended December 31, 2012

included in this Annual Report on Form 10-K.

Restructuring

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Restructuring	$60,366	$—	$60,366	100 %
% of net sales	2.2 %	— %		

During 2011, we incurred $60.4 million of restructuring expenses due to charges relating to a series of initiatives to accelerate operating cost reductions and improve overall operating efficiency. See Note 4. “Restructuring,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K.

Foreign Currency Gain (Loss)

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Foreign currency gain (loss)	$995	$(3,468)	$4,463	(129)%

Foreign currency gain increased during 2011 compared with 2010 primarily due to a decrease in our foreign currency denominated assets and liabilities in 2011.

Interest Income

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Interest income	$13,391	$14,375	$(984)	(7)%

Interest income decreased during 2011 compared with 2010 primarily as a result of interest received from notes receivable and penalties for late customer payments during 2010, partially offset by interest received on long-term investments during 2011.

Interest Expense, Net

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Interest expense, net	$(100)	$(6)	$(94)	1,567 %

Interest expense, net of amounts capitalized, remained consistent during 2011 compared with 2010, as a result of substantially all interest expense being capitalized into property, plant and equipment or project assets during both periods.

Other Income (Expense), Net

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Other income (expense), net	$665	$2,273	$(1,608)	(71)%

Other income, net decreased during 2011 compared with 2010, primarily as a result of a realized gain associated with the sale of our equity investment in a related party in 2010.

(Loss) Income Before Income Taxes (Segment Profit)

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(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
(Loss) income before income taxes (Segment profit)				
Components	$(24,451)	$916,268	$(940,719)	(103)%
Systems	(29,262)	(154,191)	124,929	(81)%
Total	$(53,713)	$762,077	$(815,790)	(107)%

Components segment (loss) income before taxes decreased $940.7 million during 2011 compared with 2010, primarily due to goodwill impairment, restructuring initiatives, lower average selling prices, and higher costs resulting from the manufacturing excursion and related remediation program discussed above, partially offset by an increase in volume of solar modules sold.

Systems segment loss before income taxes decreased $124.9 million during 2011 compared with 2010, primarily due to an increase in the number and size of systems projects under construction for which all revenue recognition criteria were met between the periods. For discussion of profitability of various systems projects see gross profit discussion above.

Income Tax (Benefit) Expense

(Dollars in thousands)	Years Ended 2011	2010	Year Over Year Change	
Income tax (benefit) expense	$(14,220)	$97,876	$(112,096)	(115)%
Effective tax rate	26.5%	12.8%		

Income tax (benefit) expense decreased by $112.1 million during 2011 compared with 2010. The reduction in income tax expense in 2011 compared to 2010 was primarily attributable to the reduction in pre-tax profits during such period and a greater percentage of profits earned in lower tax jurisdictions, offset by an increase in tax expense related to the impairment of non-deductible goodwill. See Note 21. “Income Taxes,” to our consolidated financial statements for the year ended December 31, 2012 included in this Annual Report on Form 10-K for additional information.

Liquidity and Capital Resources

As of December 31, 2012, although we had a net loss for the year, we believe that our cash, cash equivalents, marketable securities, cash flows from operating activities including the contracted portion of our project pipeline, availability under our Revolving Credit Facility considering minimum liquidity covenant requirements, and access to the capital markets will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months. We intend to continue to carefully execute our Long Term Strategic Plan and manage credit and market risk. However, if our financial results or operating plans change from our current assumptions, we may not have sufficient resources to support the execution of our Long Term Strategic Plan.

Cash generated from operations is our primary source of operating liquidity and we believe that internally generated cash flows combined with our existing cash and cash equivalents, marketable securities, and availability under our Revolving Credit Facility considering minimum liquidity covenant requirements are sufficient to support day-to-day business operations. Our treasury department monitors our working capital to ensure we have adequate liquidity, both domestically and internationally, to support the execution of our Long Term Strategic Plan.

We intend to maintain appropriate debt levels based upon cash flow expectations, the overall cost of capital, cash requirements for operations, capital expenditures, and discretionary strategic spending. In the future, we may also engage in one or more debt or equity financings. We believe that when necessary, we will have adequate access to the capital markets, although our ability to raise capital on terms commercially acceptable to us could be constrained if

there is insufficient investor interest due to industry-wide or company-specific concerns. Such financings could result in increased expenses or dilution to our existing stockholders. If we are unable to obtain debt or equity financing on reasonable terms, we may be unable to execute our Long Term Strategic Plan.

As of December 31, 2012, we had $1,003.9 million in cash, cash equivalents, and marketable securities, compared with $788.0 million as of December 31, 2011. As of December 31, 2012 and December 31, 2011, $548.5 million and $638.9 million, respectively, of our cash, cash equivalents, and marketable securities were held by foreign subsidiaries and are generally based in euros and U.S. dollar-denominated holdings. We utilize a variety of tax planning and financing strategies in an effort to ensure that our worldwide cash is available in the locations in which it is needed.

Our expanding systems business required increased liquidity in 2012 and is expected to continue to have significant liquidity requirements in the future. Solar power project development cycles, which span the time between the identification of a site location to the commercial operation of a PV power plant, vary substantially and can take many years to mature. As a result of these long project cycles, we may need to make significant up-front investments of resources in advance of the receipt of any cash from the sale of such systems projects. These amounts include payment of interconnection and other deposits (some of which are non-refundable), posting of letters of credit, and incurring engineering, permitting, legal, and other expenses. Additionally, we may have to use our working capital or the availability under our Revolving Credit Facility to finance the construction of our systems projects, if such projects cannot be sold before construction begins. Depending upon the size and number of projects that we are developing and self-financing the construction of, the systems business may require significant liquidity. For example, we may have to substantially complete the construction of a systems project before such project is sold. Delays in construction or in completing the sale of our systems projects which we are self-financing may also impact our liquidity. We have historically financed these up-front investments for project development and when necessary, construction, primarily using working capital.

The following significant developments in 2012 have impacted or are expected to impact our liquidity:

- The amount of Accounts receivable, unbilled as of December 31, 2012 was $401.0 million and primarily represented revenues recognized on construction work performed on systems projects in advance of billings to the customer under the terms of the underlying construction contracts. Such construction costs have been funded with working capital and the unbilled amounts are expected to be billed and collected from customers during the next 12 months. Additionally, we had $270.4 million of retainage included within Other assets, which represents the portion of a systems project contract price earned by us for work performed, but held for payment by our customer as a form of security until we reach certain construction milestones. Such retainage amounts relate to construction work already performed, but are noncurrent in nature as they are expected to be billed and collected from customers beyond the next 12 months.

- The amount of finished goods inventory (“solar module inventory”) and BoS parts as of December 31, 2012 was $469.3 million and represented a 42% increase from December 31, 2011. As we continue with the construction of our project pipeline we must produce solar modules and procure BoS parts in the required volumes to support our planned construction schedules. As part of the normal construction cycle, we typically must produce or acquire the necessary materials for construction activities in advance of receiving payment for such materials. Once solar modules and BoS parts are installed in a project, such installed amounts are classified as either project assets, deferred project costs, or cost of sales depending upon whether the project is subject to a definitive sales contract and whether all revenue recognition criteria have been met. Accordingly, as of any consolidated balance sheet date, our solar module inventory represents solar modules that will be installed in our project pipeline or that we expect to sell to third parties.

- There may be a delay in when our solar module inventory and BoS parts to be installed in our projects can be converted into cash compared to a typical third-party module sale. Such timing differences temporarily reduce our liquidity to the extent that we have already paid for our BoS parts or the underlying costs to produce our solar module inventories. As previously announced, we have reduced our manufacturing capacity and planned solar module production levels to match expected market demand, which considers our systems project pipeline. This decrease in planned production reduces our risk and the impact on liquidity of having excess solar module inventories that we must sell to third parties as we execute our Long Term Strategic Plan and respond to market pricing uncertainties for solar modules. Our solar module inventory as of December 31, 2012 is expected to primarily support our systems business with the remaining amounts being used to support expected near term demand for third-party module sales. As of December 31, 2012, approximately $212 million or 57% of our solar module inventory was either on-site or in-transit to our systems projects. Of this amount, approximately $69 million of solar module inventories or 19% of

the total solar module inventory balance was physically segregated for certain projects for the purpose of qualifying such projects for the Department of Treasury's Section 1603 cash grant program prior to the program's expiration in December 2011. Such segregated solar module inventories are expected to be installed in the underlying systems projects in the normal course of our construction. All BoS parts are for our systems business projects.

With the closure at the end of 2012 of our Frankfurt (Oder) manufacturing plants and our strategy to focus our sales efforts on providing utility scale systems solutions to sustainable markets, our near term liquidity may be adversely impacted as we continue to shift our selling efforts from the European markets, in which we have historically generated a significant portion of our net sales, to new markets, in which we have not historically generated any meaningful portion of our net sales. Additionally, as discussed further above, our utility scale systems solutions, including development and construction of such utility scale systems, have in the past and are expected in the future to require the use of our working capital and other sources of liquidity in advance of receiving any payments for the sale of such projects. The liquidity requirements for such systems projects can be greater than the working capital required for the sale of solar modules. We

believe that the sold/contracted portion of our advance stage systems project pipeline will provide us with sufficient liquidity and working capital to prudently execute our Long Term Strategic Plan.

- In connection with the execution of our Long Term Strategic Plan, we expect joint ventures or other business arrangements with strategic partners to be a key part of our strategy. We have begun initiatives in several markets to expedite our penetration of those markets and establish relationships with potential strategic partners, customers, and policymakers. Some of these business arrangements, focused primarily on development efforts to expand our project pipeline in sustainable markets, are expected to involve a significant cash investment or other allocation of working capital that may reduce our liquidity or require us to pursue additional sources of financing, assuming such sources are available to us. Additionally, in order to execute our Long Term Strategic Plan in such markets, we may elect or be required to temporarily retain an ownership interest in the underlying systems projects we develop or construct. Any such retained ownership interest is expected to impact our liquidity to the extent we do not obtain new sources of capital to fund such investments.

- Our restructuring charges, including the restructuring initiatives announced in December 2011, February 2012 and April 2012, are expected to result in total cash payments of between $100 million and $120 million, of which approximately $57 million was already made as of December 31, 2012. Such cash payments are primarily related to severance costs and the repayment of government grants for the second Frankfurt (Oder) plant.

- There is the potential for additional future restructuring actions as we continue to align our manufacturing capacity with market demand, evaluate our cost structure and identify potential cost savings opportunities, and focus on developing target markets. We could in the future incur additional restructuring costs (including potentially the repayment of debt facilities and other amounts, the payment of severance to terminated employees, and other restructuring related costs) that could reduce our liquidity position to the point where we need to pursue additional sources of financing, assuming such sources are available to us. See Note 4. “Restructuring,” to our condensed consolidated financial statements included in this Annual Report on Form 10-K.

- During 2013, we expect to spend up to $400 million for capital expenditures, including expenditures for upgrades to existing machinery and equipment, which we believe will increase our solar module efficiencies. A majority of our capital expenditures for 2013 are expected to be in foreign currencies and are therefore subject to fluctuations in currency exchange rates.

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

The unprecedented disruption in the credit markets that began in 2008 and the current instability in Europe have had a significant adverse impact on a number of financial institutions. The ongoing sovereign debt problems in Europe and its impact on the balance sheets and lending practices of European banks in particular could negatively impact our access to, and cost of, capital, and therefore could have an adverse effect on our business, results of operations, financial condition and competitive position. It could also similarly affect our customers and therefore limit the demand for our systems projects or solar modules. As of December 31, 2012, our liquidity and marketable securities and restricted investments have not been materially adversely impacted by the current credit environment, and we believe that they will not be materially adversely impacted in the near future. We will continue to closely monitor our

liquidity and the credit markets. However, we cannot predict with any certainty the impact to us of any further disruption in the current credit environment.

Cash Flows

The following table summarizes the key cash flow metrics for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

	Years Ended		
	2012	2011	2010
Net cash provided by (used in) operating activities	$762,209	$(33,463)	$705,492
Net cash used in investing activities	(383,732)	(676,457)	(742,085)
Net cash (used in) provided by financing activities	(89,109)	571,218	150,451
Effect of exchange rate changes on cash and cash equivalents	6,307	(21,368)	(12,668)
Net increase (decrease) in cash and cash equivalents	$295,675	$(160,070)	$101,190

Operating Activities

Cash provided by operating activities was $762.2 million during 2012, compared with cash used in operating activities of $33.5 million during 2011 and cash provided by operating activities of $705.5 million during 2010. The increase in operating cash flows during 2012 was primarily due to higher net cash received from customers in 2012, as compared to 2011 and 2010. This increase was partially offset by an increase in net cash paid to suppliers during 2012, as compared to 2011 and 2010. In addition, income taxes paid, net of refunds decreased from payments of $80.1 million and $46.2 million in 2010 and 2011, respectively, to a net refund of $21.5 million in 2012, primarily due to certain German income tax refunds received during 2012. The remaining increase in cash provided by operating activities was the result of net differences in excess tax benefits from share-based compensation arrangements, interest received and interest paid in 2012 compared to 2011 and 2010.

Investing Activities

Cash used in investing activities was $383.7 million during 2012, compared with $676.5 million during 2011 and $742.1 million during 2010. Cash used in investing activities during 2012 included capital expenditures of $379.2 million, compared to $731.8 million and $588.9 million in 2011 and 2010, respectively. The decrease in capital expenditures was primarily due to a lower amount of capital expenditures during 2012 related to our previously planned manufacturing plants in Vietnam and Mesa, Arizona compared to capital expenditures made during 2011 and 2010 related to manufacturing plant expansions primarily in Malaysia and Germany. Also, we decreased our net investment in marketable securities by $79.5 million during 2012 compared to decreases of $161.4 million during 2011 and $94.8 million during 2010. Cash used to fund our estimated future collection and recycling program costs for covered solar modules during 2012 was $80.7 million, compared to $62.7 million in 2011 and $43.1 million in 2010. In January 2011 we acquired Ray Tracker, Inc., a tracking technology and photovoltaic balance of systems company in an all-cash transaction with an initial payment of $21.1 million. During the year ended 2012, we made a second payment of $2.4 million under the terms of the acquisition agreement. In July 2010, we acquired NextLight Renewable Power, LLC, a leading developer of utility-scale solar projects in the southwestern United States for $296.5 million. The remaining change in cash used in investing activities was primarily driven by a reduction in restricted cash during 2012 compared to 2011.

Financing Activities

Cash used in financing activities was $89.1 million during 2012 compared with cash provided by financing activities of $571.2 million during 2011 and $150.5 million during 2010.

Cash used in financing activities during 2012 resulted primarily from the repayment of long-term debt, which included our German Facility Agreement, for a total of $178.8 million and the repayment of economic development funding of $6.8 million, partially offset by the net proceeds from our Revolving Credit Facility of $70.0 million and excess tax benefit from share-based compensation arrangements of $27.4 million.

Cash provided by financing activities was $571.2 million during 2011 and resulted primarily from proceeds of $370.1 million from borrowings on our Malaysian Ringgit Facility Agreement, German Facility Agreement, and Malaysian Euro Facility along with $100.0 million of net proceeds from borrowings under our Revolving Credit Facility. Additionally, we recorded excess tax benefits from share-based compensation arrangements of $110.8 million and received cash from employee stock option exercises of $8.3 million. We used $33.8 million of cash for the repayment of long-term debt.

Cash provided by financing activities was $150.5 million during 2010 and resulted primarily from proceeds received from borrowings under our Revolving Credit Facility of $100.0 million, excess tax benefits from share-based compensation arrangements of $69.4 million, and from cash received from employee stock option exercises of $9.4 million, partially offset by the repayment of long-term debt of $27.9 million.

Contractual Obligations

The following table presents our contractual obligations as of December 31, 2012 (in thousands), which consists of legal commitments requiring us to make fixed or determinable cash payments. We purchase raw materials for inventory or balance of systems parts, services, and manufacturing equipment from a variety of vendors. We also enter into contracts for the construction of systems business solar power projects. During the normal course of business, in order to manage manufacturing and construction lead times and help assure adequate supply, we enter into agreements with suppliers that either allow us to procure goods and services when we choose or that establish purchase requirements each year or over the term of the agreement.

		Payments Due by Year			
Contractual Obligations	Total	Less Than 1 Year	1 - 3 Years	3 - 5 Years	More Than 5 Years
Long-term debt obligations	$563,340	$63,046	$391,661	$77,969	$30,664
Interest payments (1)	40,786	14,960	21,561	3,870	395
Capital lease obligations	2,414	556	924	892	42
Operating lease obligations	64,860	11,457	20,230	19,069	14,104
Purchase obligations (2)	697,198	496,421	144,367	45,230	11,180
Recycling obligations (3)	212,835	—	—	—	212,835
Other obligations	10,587	3,909	6,678	—	—
Total	$1,592,020	$590,349	$585,421	$147,030	$269,220

(1) Includes estimated cash interest to be paid over the remaining terms of the underlying debt. Interest payments are based on fixed and floating rates in effect at December 31, 2012 and include the effect of interest rate and cross currency swap agreements.

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

(3) We assume our collection and recycling obligations will be satisfied more than five years from December 31, 2012.

In addition to the amounts shown in the table above, we have recorded $141.5 million of unrecognized tax benefits as liabilities in accordance with ASC 740, Income Taxes, and we are uncertain as to if or when such amounts may be settled.

Debt and Credit Sources

As of December 31, 2012, we had $563.3 million in outstanding long-term debt, excluding amounts related to capital leases and unamortized discount, and $171.6 million in outstanding letters of credit and bank guarantees. Our long-term debt consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

Type	December 31, 2012	December 31, 2011
Revolving Credit Facility	$ 270,000	$ 200,000
German Facility Agreement	—	140,085
Malaysian Ringgit Facility Agreement	151,901	146,725
Malaysian Euro Facility Agreement	58,255	67,556
Malaysian Facility Agreement	78,657	102,008
Director of Development of the State of Ohio	4,527	6,337
France Facility Agreement	—	4,833

Capital lease obligations	1,955	2,440
	565,295	669,984
Less unamortized discount	(2,723)	(6,336)
Total long-term debt	562,572	663,648
Less current portion	(62,349)	(44,505)
Noncurrent portion	$ 500,223	$ 619,143

At December 31, 2012, future principal payments on our long-term debt, excluding amounts related to capital leases and

unamortized discounts were due as follows (in thousands):

2013	$63,046
2014	63,083
2015	328,578
2016	42,070
2017	35,899
Thereafter	30,664
Total long-term debt future principal payments	$563,340

The available capacity under our Revolving Credit Facility was $199.1 million at December 31, 2012. We believe that when necessary, we will have adequate access to capital markets, but there may be circumstances in the future related to macroeconomic conditions or factors specific to us that could limit, or increase the cost of, capital from such markets.

We were in compliance with all debt covenants at December 31, 2012, and expect to remain in compliance with these covenants for at least the next twelve months.

See Note 16. “Debt,” to our consolidated financial statements included in this Annual Report on Form 10-K for further information about our long-term debt facilities.

Off-Balance Sheet Arrangements

We had no off-balance sheet arrangements as of December 31, 2012.

Recent Accounting Pronouncements

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

Item 7A: Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Exchange Risk

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

Cash Flow Exposure: We expect our subsidiaries to have material future cash flows, including net sales and expenses, that will be denominated in currencies other than our subsidiaries’ functional currencies. Our primary cash flow exposures are cash received from customers, cash paid to suppliers and associates. Changes in the exchange rates between our subsidiaries’ functional currencies and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward and cross-currency swap contracts to hedge the value of a portion of these forecasted cash flows. These foreign exchange forward and cross-currency swap contracts qualified as cash flow hedges in accordance with ASC 815, Derivatives and Hedging, and we designated them as such. We initially report the effective portion of the derivative’s gain or loss in “Accumulated other comprehensive income (loss),” and subsequently reclassify amounts into earnings when the underlying hedged transaction is settled.

Our operations in Malaysia pay a portion of their operating expenses, such as associate wages and utilities, in Malaysian ringgit, exposing us to foreign currency exchange risk for those Malaysian ringgit expenses. As a result of

our restructuring of our European operations including the closure of our Frankfurt (Oder) plant at the end of 2012, our exposure to foreign exchange risk associated with the Euro is significantly reduced compared to 2011 and 2010.

For additional details on our derivative hedging instruments and activities, refer to Note 10. “Derivative Financial Instruments,” to our consolidated financial statements included in this Annual Report on Form 10-K.

Our international operations accounted for 20%, 55%, and 87% of our net sales during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively, of which 18%, 78%, and 84% of these international sales, respectively, were denominated in euros. As a result, we have exposure to foreign currency exchange risk with respect to our net sales. Fluctuations in exchange rates, particularly in the U.S. dollar to euro and U.S. dollar to Malaysian ringgit, affect our gross profit and could result in foreign exchange and operating losses. In the past, most of our exposure to foreign currency exchange risk has related to

currency gains and losses between the time we sign and settle our sales contracts denominated in euros. For the years ended December 31, 2012, December 31, 2011, and December 31, 2010, a 10% change in the euro exchange rates would have impacted our net euro sales by $11.6 million, $123.7 million, and $184.6 million, respectively, excluding the effect of our hedging activities. Our net sales denominated in euros are expected to continue to decline and therefore our foreign currency exchange risk associated with the euro is expected to also decline.

Transaction Exposure: Many components of our business have assets and liabilities (primarily receivables, investments, accounts payable, debt and accrued liabilities, and solar module collection and recycling liabilities) that are denominated in currencies other than the subsidiary's functional currency. Changes in the exchange rates between our subsidiaries' functional currencies and the other currencies in which these assets and liabilities are denominated can create fluctuations in our reported consolidated financial position, results of operations, and cash flows. We may enter into foreign exchange forward contracts or other derivative instruments to economically hedge assets and liabilities against the short-term effects of currency exchange rate fluctuations. The gains and losses on these derivative instruments will offset all or part of the transaction gains and losses that we recognize in earnings on the related foreign currency assets and liabilities. These contracts typically have maturities of less than three months.

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

If the U.S. dollar would have weakened by 10% against the euro, Malaysian ringgit, and Canadian dollar, the impact on our loss before income taxes during the year ended December 31, 2012 would have been $2.4 million (unfavorable). If the U.S. dollar would have weakened by 10% against the euro, Malaysian ringgit, and Canadian dollar the impact on our income (loss) before income taxes during the years ended December 31, 2011 and December 31, 2010 would have been $0.5 million (favorable) and $6.6 million (unfavorable), respectively.

Earnings Translation Exposure: Fluctuations in foreign currency exchange rates create volatility in our reported results of operations because we are required to translate the financial statements of our subsidiaries that do not have a U.S. dollar functional currency. We may decide to purchase forward exchange contracts or other instruments to offset this impact from currency fluctuations. These contracts would be marked-to-market on a monthly basis and any unrealized gain or loss would be recorded in earnings. We do not hedge translation exposure at this time, but may do so in the future.

In the past, currency exchange rate fluctuations have had an impact on our business and results of operations. For example, currency exchange rate fluctuations negatively impacted our cash flows by $6.3 million, $21.4 million, and $12.7 million in the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively. Although we cannot predict the impact of future currency exchange rate fluctuations on our business or results of operations, we believe that we will continue to have risk associated with currency exchange rate fluctuations in the future. We will continue to evaluate actions we can take to use derivative instruments to help mitigate this risk.

Interest Rate Risk

Our primary interest rate risks are our outstanding variable rate debt, our solar power system sales prices from the effect of interest rates on our customer's financing of such solar power systems, and our investments in marketable securities and restricted investments.

Variable Rate Debt Exposure: We are exposed to interest rate risk because our Revolving Credit Facility, Malaysian Ringgit Facility Agreement, Malaysian Euro Facility Agreement, and the floating rate portion of our Malaysian Facility Agreement have variable interest rates, exposing us to variability in interest expense and cash flows. We use interest rate and cross-currency swap contracts to mitigate our exposure to interest rate fluctuations associated with a

portion of our variable rate debt instruments. We have interest rate swap contracts in place to mitigate the interest rate risk for a portion of the floating rate portion of our Malaysian Facility Agreement. We also have a cross-currency swap contract in place to mitigate the interest rate risk of our Malaysian Ringgit Facility Agreement.

For additional details on our derivative hedging instruments and activities, refer to Note 10. “Derivative Financial Instruments,” to our consolidated financial statements included in this Annual Report on Form 10-K.

An increase in the Euro Interbank Offered Rate (“EURIBOR”) would impact our cost of borrowing under our Malaysian Euro Facility Agreement and an increase in the London Interbank Offered Rate (“LIBOR”) would impact our cost of borrowing under our Revolving Credit Facility. If EURIBOR changes by 100 basis points, our interest cost for the year ended December 31, 2012 would have changed by $0.6 million. If LIBOR changed by 100 basis points, our interest cost for the year ended December

31, 2012 would have changed by $1.7 million.

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

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

As of December 31, 2012, our marketable securities earned a pre-tax yield of 0.50%, with a weighted average maturity of 8 months. If interest rates were to instantaneously change by 100 basis points, the market value of our total investment portfolio would change by $0.7 million. The direct risk to us associated with fluctuating interest rates is limited to our marketable security portfolio and we do not believe that a 10% change in interest rates would have a significant impact on our financial position, results of operations, or cash flows. As of December 31, 2012, all of our marketable securities were in commercial paper, corporate debt securities, federal and foreign agency debt, foreign government obligations, supranational debt, and U.S. government obligations.

As of December 31, 2012, our restricted investments earned a pre-tax yield of 3.85%, with a weighted average maturity of approximately 18 years. If interest rates were to instantaneously change by 100 basis points, the market value of our total restricted investment portfolio would change by $55.4 million. The direct risk to us associated with fluctuating interest rates is limited to our restricted investment portfolio. Given that our restricted investment portfolio pre-funds our estimated solar module collection and recycling obligations, and given the expected holding period of these investments, we believe it is unlikely that a 10% change in interest rates would have a significant impact on our financial position, results of operations, or cash flows. As of December 31, 2012, all of our restricted investments were in foreign and U.S. government obligations.

Commodity and Component Risk

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

changes in the cost of the raw materials and components for our products and systems to our customers, and may be in default of our delivery obligations if we experience a manufacturing disruption.

Credit Risk

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

In addition, we have certain investments in debt securities related to countries in the Eurozone. These investments are for

debt securities of countries with a lower likelihood of experiencing significant economic, fiscal, and/or political strains resulting in a default or severe decreases in fair value. However, such risk cannot be entirely eliminated and is reflected in the current fair value of the investments as of December 31, 2012.

Item 8: Financial Statements and Supplementary Data

Consolidated Financial Statements

Our consolidated financial statements as required by this item are included in Item 15: "Exhibits and Financial Statement Schedules – Consolidated Financial Statements," of this Annual Report on Form 10-K. See Item 15(a)(1) for a list of our consolidated financial statements.

Selected Quarterly Financial Data (Unaudited)

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

	Quarters Ended							
	Dec 31, 2012	Sep 30, 2012	Jun 30, 2012	Mar 31, 2012	Dec 31, 2011	Sep 30, 2011	Jun 30, 2011	Mar 31, 2011
	(In thousands, except per share amounts)							
Net sales	$1,075,011	$839,147	$957,332	$497,055	$660,352	$1,005,788	$532,774	$567,293
Cost of sales	781,464	600,431	713,591	420,310	522,228	626,624	337,976	307,628
Gross profit	293,547	238,716	243,741	76,745	138,124	379,164	194,798	259,665
Operating expenses:								
Research and development	31,639	32,372	32,365	36,084	37,906	38,164	33,102	31,351
Selling, general and administrative	63,417	73,507	52,184	91,820	125,926	112,743	86,872	87,000
Production start-up	1,637	1,595	533	4,058	5,881	5,514	10,294	11,931
Goodwill impairment	—	—	—	—	393,365	—	—	—
Restructuring	24,839	24,197	19,000	401,065	60,366	—	—	—
Total operating expenses	121,532	131,671	104,082	533,027	623,444	156,421	130,268	130,282
Operating income (loss)	172,015	107,045	139,659	(456,282)	(485,320)	222,743	64,530	129,383
Foreign currency (loss) gain	(2,156)	3	1,015	(984)	243	(1,857)	1,659	950
Interest and other income (expense), net	715	3,713	(5,327)	780	3,635	1,879	5,768	2,674
Income (loss) income before	170,574	110,761	135,347	(456,486)	(481,442)	222,765	71,957	133,007

income taxes								
Income tax expense (benefit)	16,396	22,844	24,364	(7,070)	(68,329)	26,251	10,819	17,039
Net income (loss)	$154,178	$87,917	$110,983	$(449,416)	$(413,113)	$196,514	$61,138	$115,968
Net income (loss) per share:								
Basic	$1.77	$1.01	$1.28	$(5.20)	$(4.78)	$2.28	$0.71	$1.36
Diluted	$1.74	$1.00	$1.27	$(5.20)	$(4.78)	$2.25	$0.70	$1.33
Weighted-average number of shares used in per share calculations:								
Basic	87,084	86,992	86,855	86,507	86,428	86,338	86,164	85,324
Diluted	88,549	87,765	87,653	86,507	86,428	87,151	87,126	87,053

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

None.

Item 9A: Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognized that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure control and procedure also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

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

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

Our management is responsible for establishing and maintaining adequate "internal control over financial reporting," as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2012 based on the criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America.

Based on the results of our evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2012.

The effectiveness of our internal control over financial reporting as of December 31, 2012 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report which appears herein.

(c) Changes in Internal Control over Financial Reporting

Our management, including our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of our "internal control over financial reporting" as defined in Exchange Act Rule 13a-15(f) and Rule 15d-15(f) to determine whether any changes in our internal control over financial reporting occurred during the year ended December 31, 2012 that materially affected, or are reasonably likely to material affect, our internal control over financial reporting.

Based on that evaluation, there have been no such changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2012 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(d) Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent all errors and all fraud. Control systems, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control systems' objectives are being met. Further, the design of any control system must reflect the fact that there are resource constraints, and the benefits of all controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our Company have been detected. These inherent

limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of error or mistake. Control systems can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

Item 9B: Other Information

None.

PART III

Item 10: Directors, Executive Officers, and Corporate Governance

Information concerning our board of directors and audit committee will appear in our 2013 Proxy Statement, under the sections entitled “Directors” and “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

For information with respect to our executive officers, see Item 1: “Business – Executive Officers of the Registrant,” of this Annual Report on Form 10-K.

Information concerning Section 16(a) beneficial ownership reporting compliance will appear in our 2013 Proxy Statement under the section entitled “Section 16(a) Beneficial Ownership Reporting Compliance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

We have adopted a Code of Business Conduct and Ethics that applies to all directors, officers, and associates of First Solar. Information concerning this code will appear in our 2013 Proxy Statement under the section entitled “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Item 11: Executive Compensation

Information concerning executive compensation and related information will appear in our 2013 Proxy Statement under the section entitled “Executive Compensation,” and information concerning the Compensation Committee will appear under “Corporate Governance” and “Compensation Committee Report.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

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

Information concerning the security ownership of certain beneficial owners and management and related stockholder matters, including certain information regarding our equity compensation plans, will appear in our 2013 Proxy Statement under the section entitled “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

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

Information concerning certain relationships and related party transactions will appear in our 2013 Proxy Statement under the section entitled “Certain Relationships and Related Party Transactions.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference. Information concerning director independence will appear in our 2013 Proxy Statement under the section entitled “Corporate Governance.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Item 14: Principal Accountant Fees and Services

Information concerning principal accountant fees and services and the audit committee’s pre-approval policies and procedures will appear in our 2013 Proxy Statement under the section entitled “Principal Accountant Fees and Services.” The information in that portion of the Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

PART IV

Item 15: Exhibits and Financial Statement Schedules

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

(1) Consolidated Financial Statements

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

(2) Financial Statement Schedule:

Schedule II — Valuation and Qualifying Accounts

SCHEDULE II: VALUATION AND QUALIFYING ACCOUNTS
For the Years Ended December 31, 2012, December 31, 2011, and December 31, 2010

Description	Balance at Beginning of Year	Additions	Deductions	Balance at End of Year
	(In thousands)			
Allowance for doubtful accounts receivable				
Year ended December 31, 2010	$990	$—	$(990)	$—
Year ended December 31, 2011	$—	$10,032	$—	$10,032
Year ended December 31, 2012	$10,032	$4,471	$—	$14,503
Valuation allowance against our deferred tax assets				
Year ended December 31, 2010	$3,190	$1,601	$—	$4,791
Year ended December 31, 2011	$4,791	$3,473	$(287)	$7,977
Year ended December 31, 2012	$7,977	$146,942	$—	$154,919

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

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

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

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized on February 27, 2013.

FIRST SOLAR, INC.
By: /s/ MARK R. WIDMAR
Mark R. Widmar
Principal Accounting Officer

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

Signature	Title	Date
/s/ JAMES A. HUGHES James A. Hughes	Chief Executive Officer and Director	February 27, 2013
/s/ MARK R. WIDMAR Mark R. Widmar	Chief Financial Officer and Chief Accounting Officer (Principal Accounting Officer)	February 27, 2013
Additional Directors:		
/s/ MICHAEL J. AHEARN Michael J. Ahearn	Chairman of the Board of Directors	February 27, 2013
/s/ RICHARD D. CHAPMAN Richard D. Chapman	Director	February 27, 2013
/s/ GEORGE A. HAMBRO George A. Hambro	Director	February 27, 2013
/s/ CRAIG KENNEDY Craig Kennedy	Director	February 27, 2013
/s/ JAMES F. NOLAN James F. Nolan	Director	February 27, 2013
/s/ WILLIAM J. POST William J. Post	Director	February 27, 2013
/S/ J. THOMAS PRESBY J. Thomas Presby	Director	February 27, 2013
/s/ PAUL H. STEBBINS Paul H. Stebbins	Director	February 27, 2013
/s/ MICHAEL SWEENEY Michael Sweeney	Director	February 27, 2013

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of First Solar, Inc. and its subsidiaries at December 31, 2012 and December 31, 2011, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2012 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A(b). Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

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

/s/ PricewaterhouseCoopers LLP
Phoenix, Arizona
February 26, 2013

FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	December 31, 2012	December 31, 2011
ASSETS		
Current assets:		
Cash and cash equivalents	$ 901,294	$ 605,619
Marketable securities	102,578	66,146
Accounts receivable trade, net	553,567	310,568
Accounts receivable, unbilled	400,987	533,399
Inventories	434,921	475,867
Balance of systems parts	98,903	53,784
Deferred project costs	21,390	197,702
Deferred tax assets, net	44,070	41,144
Assets held for sale	49,521	—
Note receivable, affiliate	17,725	—
Prepaid expenses and other current assets	207,368	329,032
Total current assets	2,832,324	2,613,261
Property, plant and equipment, net	1,525,382	1,815,958
Project assets	358,824	374,881
Deferred project costs	486,654	122,688
Deferred tax assets, net	317,473	340,274
Marketable securities	—	116,192
Restricted cash and investments	301,400	200,550
Goodwill	65,444	65,444
Inventories	134,375	60,751
Other assets	326,816	67,615
Total assets	$ 6,348,692	$ 5,777,614
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 350,230	$ 176,448
Income taxes payable	5,474	9,541
Accrued expenses	554,433	406,659
Current portion of long-term debt	62,349	44,505
Deferred revenue	2,056	41,925
Other current liabilities	126,832	294,646
Total current liabilities	1,101,374	973,724
Accrued solar module collection and recycling liability	212,835	167,378
Long-term debt	500,223	619,143
Payments and billings for deferred project costs	636,518	167,374
Other liabilities	292,216	206,132
Total liabilities	2,743,166	2,133,751
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.001 par value per share; 500,000,000 shares authorized; 87,145,323 and 86,467,873 shares issued and outstanding at December 31, 2012 and December 31,	87	86

2011, respectively		
Additional paid-in capital	2,065,527	2,022,743
Accumulated earnings	1,529,733	1,626,071
Accumulated other comprehensive income (loss)	10,179	(5,037)
Total stockholders' equity	3,605,526	3,643,863
Total liabilities and stockholders' equity	$ 6,348,692	$ 5,777,614

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

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

	Years Ended		
	December 31, 2012	December 31, 2011	December 31, 2010
Net sales	$3,368,545	$ 2,766,207	$ 2,563,515
Cost of sales	2,515,796	1,794,456	1,378,669
Gross profit	852,749	971,751	1,184,846
Operating expenses:			
Research and development	132,460	140,523	94,797
Selling, general and administrative	280,928	412,541	321,704
Production start-up	7,823	33,620	19,442
Goodwill impairment	—	393,365	—
Restructuring	469,101	60,366	—
Total operating expenses	890,312	1,040,415	435,943
Operating (loss) income	(37,563)	(68,664)	748,903
Foreign currency (loss) gain	(2,122)	995	(3,468)
Interest income	12,824	13,391	14,375
Interest expense, net	(13,888)	(100)	(6)
Other income, net	945	665	2,273
(Loss) income before income taxes	(39,804)	(53,713)	762,077
Income tax expense (benefit)	56,534	(14,220)	97,876
Net (loss) income	$(96,338)	$ (39,493)	$ 664,201
Net (loss) income per share:			
Basic	$(1.11)	$ (0.46)	$ 7.82
Diluted	$(1.11)	$ (0.46)	$ 7.68
Weighted-average number of shares used in per share calculations:			
Basic	86,860	86,067	84,891
Diluted	86,860	86,067	86,491

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)

	Year Ended December 31, 2012	December 31, 2011	December 31, 2010
Net (loss) income	$(96,338)	$(39,493)	$664,201
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	9,896	(18,034)	(35,825)
Unrealized gain on marketable securities and restricted investments	26,813	18,660	3,820
Unrealized (loss) gain on derivative instruments	(21,493)	21,580	14,358
Other comprehensive income (loss), net of tax	15,216	22,206	(17,647)
Comprehensive (loss) income	$(81,122)	$(17,287)	$646,554

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock						
	Shares	Amount	Additional Paid-In Capital	Contingent Consideration	Accumulated Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
Balance, December 26, 2009	85,208	$85	$1,658,091	$ 2,844	$1,001,363	$ (9,596)	$2,652,787
Net income	—	—	—	—	664,201	—	664,201
Foreign currency translation adjustments	—	—	—	—	—	(35,825)	(35,825)
Change in unrealized gain on derivative instruments, net of tax	—	—	—	—	—	14,358	14,358
Change in unrealized gain on marketable securities and restricted investments, net of tax	—	—	—	—	—	3,820	3,820
Exercise of stock options, including excess tax benefits	455	1	70,945	—	—	—	70,946
Issuance of restricted and unrestricted stock	168	—	(12,108)	—	—	—	(12,108)
Share-based compensation	—	—	96,766	—	—	—	96,766
Common stock issued for acquisition	13	—	1,726	(1,726)	—	—	—
Balance, December 31, 2010	85,844	86	1,815,420	1,118	1,665,564	(27,243)	3,454,945
Net loss	—	—	—	—	(39,493)	—	(39,493)
Foreign currency translation adjustments	—	—	—	—	—	(18,034)	(18,034)
Change in unrealized gain on derivative instruments, net of tax	—	—	—	—	—	21,580	21,580
Change in unrealized gain on marketable securities and restricted investments, net of tax	—	—	—	—	—	18,660	18,660
Exercise of stock options, including excess tax benefits	251	—	112,250	—	—	—	112,250
Issuance of restricted and unrestricted stock	365	—	(24,102)	—	—	—	(24,102)
Share-based compensation	—	—	118,057	—	—	—	118,057
Common stock issued for acquisition	8	—	1,118	(1,118)	—	—	—
Balance, December 31, 2011	86,468	86	2,022,743	—	1,626,071	(5,037)	3,643,863
Net loss	—	—	—	—	(96,338)	—	(96,338)

Foreign currency translation adjustments	—	—	—	—	—	9,896	9,896
Change in unrealized loss on derivative instruments, net of tax	—	—	—	—	—	(21,493)	(21,493)
Change in unrealized gain on marketable securities and restricted investments, net of tax	—	—	—	—	—	26,813	26,813
Exercise of stock options, including excess tax benefits	253	1	8,136	—	—	—	8,137
Issuance of restricted and unrestricted stock	424	—	(5,019)	—	—	—	(5,019)
Share-based compensation	—	—	39,667	—	—	—	39,667
Balance, December 31, 2012	87,145	$87	$2,065,527	$ —	$1,529,733	$ 10,179	$3,605,526

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended		
	December 31, 2012	December 31, 2011	December 31, 2010
Cash flows from operating activities:			
Cash received from customers	$3,231,268	$ 2,290,944	$ 2,458,088
Cash paid to suppliers and associates	(2,447,337)	(2,159,429)	(1,614,763)
Interest received	4,693	10,156	20,531
Interest paid	(19,916)	(14,229)	(7,610)
Income tax refunds (payments), net	21,543	(46,153)	(80,064)
Excess tax benefit from share-based compensation arrangements	(27,373)	(110,836)	(69,367)
Other operating activities	(669)	(3,916)	(1,323)
Net cash provided by (used in) operating activities	762,209	(33,463)	705,492
Cash flows from investing activities:			
Purchases of property, plant and equipment	(379,228)	(731,814)	(588,914)
Purchases of marketable securities	(29,200)	(331,240)	(462,070)
Proceeds from sales and maturities of marketable securities	108,663	492,613	556,904
Payments received on notes receivable	—	—	61,658
Investment in note receivable, affiliate	(21,659)	—	—
Payments received on note receivable, affiliate	4,498	—	—
Purchase of restricted investments	(80,667)	(62,749)	(43,064)
Change in restricted cash	16,215	(23,154)	—
Sale of investment in related party	—	—	28,596
Acquisitions, net of cash acquired	(2,437)	(21,105)	(296,496)
Other investing activities	83	992	1,301
Net cash used in investing activities	(383,732)	(676,457)	(742,085)
Cash flows from financing activities:			
Proceeds from stock option exercises	176	8,326	9,379
Repayment of borrowings under revolving credit facility	(1,305,000)	(450,000)	—
Proceeds from borrowings under revolving credit facility	1,375,000	550,000	100,000
Repayment of long-term debt	(178,842)	(33,796)	(27,879)
Proceeds from borrowings under long-term debt, net of discount and issuance costs	—	370,108	—
Excess tax benefit from share-based compensation arrangements	27,373	110,836	69,367
(Repayment of) proceeds from economic development funding	(6,820)	16,188	—
Other financing activities	(996)	(444)	(416)
Net cash (used in) provided by financing activities	(89,109)	571,218	150,451
Effect of exchange rate changes on cash and cash equivalents	6,307	(21,368)	(12,668)
Net increase (decrease) in cash and cash equivalents	295,675	(160,070)	101,190
Cash and cash equivalents, beginning of the period	605,619	765,689	664,499
Cash and cash equivalents, end of the period	$901,294	$ 605,619	$ 765,689
Supplemental disclosure of noncash investing and financing activities:			
Property, plant and equipment acquisitions funded by liabilities	$62,344	$ 74,391	$ 88,977
Settlement of long-term debt	$4,802	$ —	$ —

See accompanying notes to these consolidated financial statements.

FIRST SOLAR, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. First Solar and Its Business

We design, manufacture, and sell thin-film photovoltaic (“PV”) solar modules, which we currently produce at our plants in Perrysburg, Ohio, and Kulim, Malaysia. Through our fully integrated systems business, we provide a complete turn-key solar power system solution or any combination of our systems solutions, which may include project development, EPC services, O&M services, and project finance expertise.

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

During the year ended December 31, 2012, the Company corrected certain errors that overstated net loss by $7.8 million for the year ended December 31, 2011, with such correction having the effect of reducing net loss by $7.8 million for the year ended December 31, 2012. Management has determined that the errors and correction did not have a material effect on current or prior periods.

Note 2. Summary of Significant Accounting Policies

Basis of Presentation. Certain prior period amounts have been reclassified to conform to the current year presentation. These reclassifications had no impact on our consolidated statements of operations, consolidated statements of comprehensive income, consolidated balance sheets, or consolidated statements of cash flows.

Principles of Consolidation. These consolidated financial statements include the accounts of First Solar, Inc. and all of its subsidiaries and are prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP). We eliminated all inter-company transactions and balances during consolidation. Investments in unconsolidated affiliates in which we have less than a controlling interest in are accounted for using the cost or equity method of accounting.

Fiscal Periods. Prior to 2011, our fiscal quarters ended on the Saturday closest to the end of the applicable calendar quarter. In July 2010, our board of directors approved a change in our fiscal year from a 52 or 53 week fiscal year to a calendar year. This change to the calendar year cycle became effective as of the end of the 2010 fiscal year. As a result, our 2010 fiscal year, which began on December 27, 2009, ended on December 31, 2010 instead of December 25, 2010. In addition, effective January 1, 2011, our fiscal quarters coincided with calendar quarters.

Use of Estimates. The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and the accompanying notes. Estimates in these consolidated financial statements include revenue recognition including the percentage of completion method, inventory valuation, estimates of future cash flows from and the economic useful lives of long-lived assets, certain accrued liabilities, income taxes and tax valuation allowances, reportable segment allocations, accrued warranty and related expense, accrued collection and recycling expense, and fair value estimates. Despite our intention to establish accurate estimates and reasonable assumptions, actual results could differ materially from these estimates and assumptions.

Fair Value Measurements. We measure certain financial assets and liabilities at fair value. As of December 31, 2012, our financial assets and liabilities consist principally of cash and cash equivalents, marketable securities, notes receivable, restricted investments, derivative contracts, accounts payable, accrued expenses, debt, and income taxes payable. ASC 820, Fair Value Measurements and Disclosures, defines fair value, establishes a framework for measuring fair value in accordance with generally accepted accounting principles, and provides financial statement disclosure requirements for fair value measurements. ASC 820 defines fair value as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) on the measurement date in an orderly transaction between market participants in the principal or most advantageous market for the asset or liability. ASC 820 specifies a hierarchy of valuation techniques, which is based on whether the inputs into the valuation technique are observable or unobservable. The hierarchy is as follows:

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

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

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

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

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

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

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

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

Derivative Instruments. We recognize derivative instruments on our consolidated balance sheet at their fair value. On the date that we enter into a derivative contract, we designate the derivative instrument as a fair value hedge; a cash flow hedge; a hedge of a net investment in a foreign operation; or a derivative instrument that will not be accounted for using “hedge accounting” methods specified in ASC 815, Derivatives and Hedging. As of December 31, 2012 and December 31, 2011, all of our derivative instruments were designated either as cash flow hedges or as derivative

instruments not accounted for using hedge accounting methods.

We record changes in the fair value of a derivative instrument that is highly effective and that is designated and qualifies as a cash flow hedge, to the extent that the hedge is effective, in other comprehensive income (loss) until our earnings are affected by the variability of cash flows of the underlying hedge. We record any hedge ineffectiveness and amounts excluded from effectiveness testing in current period earnings within other income (expense), net. We report changes in the fair values of derivative instruments that are not designated or do not qualify for hedge accounting in current period earnings.

We formally document all relationships between hedging instruments and the underlying hedged items, as well as our risk-management objective and strategy for undertaking various hedge transactions, at the inception of the hedge. We support all of our derivatives with documentation specifying the underlying exposure being hedged. We also formally assess (both at the hedge's inception and on an ongoing basis) whether the derivative instruments that we use in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of the underlying hedged items and whether those derivatives are

expected to remain highly effective in future periods. When we determine that a derivative instrument is not (or has ceased to be) highly effective as a hedge, we discontinue hedge accounting prospectively. In all situations in which we discontinue hedge accounting and the derivative instrument remains outstanding, we will carry the derivative instrument at its fair value on our consolidated balance sheet and recognize subsequent changes in its fair value in our current period earnings.

Investment in Related Party. Between October 2008 and December 2010, we owned equity investments in another company in an amount that was not sufficient to provide us with significant influence over the investee's operations. Since the fair values of these equity investments were not readily determinable, they were not within the scope of the accounting guidance in ASC 320, Investments – Debt and Equity Securities, and we accounted for these equity investments using the cost method of accounting. Under the cost method of accounting, we reported investments at their acquisition cost on our consolidated balance sheets and would only have adjusted these carrying values if we sold the investments, if we acquired additional investments, or if the investments became other-than-temporarily impaired.

Receivables and Allowance for Doubtful Accounts. Trade accounts receivable are recorded at the invoiced amount for transactions with customers. We maintain allowances for doubtful accounts receivable and we estimate such allowances based on days past due, historical collection history, and other factors. We account for rebates and other customer incentives as a reduction to the selling price of our products and, therefore, as a reduction in revenue at the time of revenue recognition with a corresponding contra-asset within accounts receivable trade, net.

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

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

We classify inventories not used within our normal operating cycle (which is generally 12 months) as noncurrent inventory. This inventory generally consists of a critical raw material used in our core production process that we purchase in quantities that exceed anticipated consumption within our operating cycle.

Balance of Systems Parts. Balance of systems parts represent mounting, electrical and other construction parts purchased for solar power plants under construction, which we hold title to and are not yet installed in a solar power plant. These parts include posts, tilt brackets, tables, harnesses, combiner boxes, inverters, cables and other parts we purchase or assemble for the solar power plants we construct. Balance of systems parts does not include solar modules. We carry these parts at the lower of cost or market, with market being based on either recoverability through installation in a solar power plant under construction or through a sale.

Long-Lived Assets. We account for any impairment of our long-lived tangible assets including property, plant and equipment and definite-lived intangible assets in accordance with ASC 360, Property, Plant and Equipment. As a result, we assess long-lived assets classified as “held and used,” including our property, plant and equipment, for impairment whenever events or changes in business circumstances arise that may indicate that the carrying amount of our long-lived assets may not be recoverable. These events and changes can include significant current period operating or cash flow losses associated with the use of a long-lived asset, or group of assets, combined with a history of such losses, significant changes in the manner of use of assets, and current expectations that, it is more likely-than-not, a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. For purposes of recognition and measurement of an impairment loss, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. When impairment indicators are present, we compare undiscounted future cash flows, including the eventual disposition of the asset group at market value, to the asset group’s carrying value to determine if the asset group is recoverable.

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

We classify our long-lived tangible assets we plan to sell as “Assets held for sale” only after certain criteria have been met in accordance with ASC 360, Property, Plant and Equipment. We record assets held for sale at the lower of the carrying value or fair value less costs to sell. All of the following criteria must be met in order to classify an asset as held for sale: (i) management has the authority and commits to a plan to sell the asset; (ii) the asset is available for immediate sale in its present condition; (iii) there is an active program to locate a buyer and the plan to sell the asset has been initiated; (iv) the sale of the asset is probable within one year; (v) the asset is being actively marketed at a reasonable sale price relative to its current fair value; and (vi) it is unlikely that the plan to sell will be withdrawn or that significant changes to the plan will be made. If due to unanticipated circumstances, such assets are not sold in the 12 months after being classified as held for sale, then held for sale classification will continue as long as the above criteria are still met and the asset is being actively marketed at a reasonable sale price relative to its then current fair value.

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

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

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

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

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

Idle Property, Plant and Equipment. For property, plant and equipment that has been placed into service, but is subsequently idled temporarily, we continue to record depreciation expense during the idle period. We adjust the estimated useful life of the idled assets if the estimated useful life has changed.

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

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

Project Assets. Project assets consist primarily of costs relating to solar power projects in various stages of development that

we capitalize prior to entering into a definitive sales agreement for the solar power project. These costs include costs for land and costs for developing and constructing a PV solar power plant. Development costs can include legal, consulting, permitting, interconnect, and other similar costs. Once we enter into a definitive sales agreement, we reclassify project assets to deferred project costs on our consolidated balance sheet until the sale is completed and we have met all of the criteria to recognize the sale as revenue. We expense project assets to cost of sales after each respective project asset is sold to a customer and all revenue recognition criteria have been met (matching the expensing of costs to the underlying revenue recognition method). We classify project assets generally as noncurrent due to the nature of a solar power project and the time required to complete all activities to sell a specific project, which is typically longer than 12 months.

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

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

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

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

Milestone	Balance sheet classification -Arrangements accounted for under ASC 360 (sale of real estate)	Balance sheet classification - Arrangements accounted for under ASC 605 (long-term construction contracts)
Execution of a definitive sales arrangement, but all revenue recognition criteria are not	Deferred project costs	Deferred project costs

yet met		
Pre execution of a definitive sales arrangement	Project asset	Deferred project costs (recoverable pre-contract costs)

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

Payments and Billings for Deferred Project Costs. The liability “Payments and billings for deferred project costs,” which the current portion is part of the balance sheet caption “Other current liabilities” represents customer payments received or customer billings made under the terms of solar power project related sales arrangements for which all revenue recognition criteria for real estate transactions under ASC 360 have not yet been met. The associated solar power project costs are included within deferred

project costs.

Deferred Revenue. Deferred revenue consists of billings made or payments received in advance of meeting all revenue recognition criteria (with the exception of payments and billings for deferred project costs) for the sale of solar modules or solar power systems. We recognize deferred revenue as net sales only after all revenue recognition criteria are met.

Business Combinations. We account for business acquisitions using the acquisition method of accounting and record definite-lived intangible assets separate from goodwill. Intangible assets are recorded at their fair value based on estimates as of the date of acquisition. Goodwill is recorded as the residual amount of the purchase price consideration less the fair value assigned to the individual assets acquired and liabilities assumed as of the date of acquisition. We charge acquisition related costs that are not part of the purchase price consideration to general and administrative expense as they are incurred. These costs typically include transaction and integration costs, such as legal, accounting, and other professional fees. Contingent considerations, which represents an obligation of the acquirer to transfer additional assets or equity interests to the former owner as part of the exchange if specified future events occur or conditions are met, is accounted for at the acquisition date fair value either as a liability or as equity depending on the terms of the acquisition agreement.

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

In accordance with ASC 350, we may first make a qualitative assessment of whether it is more-likely-than-not that a reporting unit’s fair value is less than its carrying value to determine whether it is necessary to perform the two-step goodwill impairment test. The qualitative impairment test includes considering various factors including macroeconomic conditions, industry and market conditions, cost factors, a sustained share price or market capitalization decrease, and any reporting unit specific events. If it is determined through the qualitative assessment that a reporting unit’s fair value is more-likely-than-not greater than its carrying value, the two-step impairment test is not required. If the qualitative assessment indicates it is more-likely-than-not that a reporting unit’s fair value is not greater than its carrying value, we must perform the two-step impairment test. We may also elect to proceed directly to the two-step impairment test without considering such qualitative factors.

The first step in a two-step impairment test is the comparison of the fair value of a reporting unit with its carrying amount, including goodwill. Our two reporting units are the components and systems reporting units, which are the same as our reportable segments as described in Note 25. “Segment and Geographical Information,” to our consolidated financial statements. In accordance with the authoritative guidance over fair value measurements, we define the fair value of a reporting unit as the price that would be received to sell the unit as a whole in an orderly transaction between market participants at the measurement date. We primarily use the income approach methodology of valuation, which includes the discounted cash flow method, and the market approach methodology of valuation, which considers values of comparable businesses to estimate the fair values of our reporting units. We do not believe that a cost approach is relevant to measuring the fair values of our reporting units.

Significant management judgment is required when estimating the fair value of our reporting units including the forecasting of future operating results, the discount rates and expected future growth rates that we use in the discounted cash flow method of valuation, and in the selection of comparable businesses that we use in the market approach. If the estimated fair value of the reporting unit exceeds the carrying value assigned to that unit, goodwill is

not impaired and no further analysis is required.

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

See Note 6. "Goodwill and Intangible Assets," to our consolidated financial statements for additional information on our goodwill impairment tests.

Product Warranties. We provide a limited warranty against defects in materials and workmanship under normal use and service conditions for 10 years following delivery to the owners of our solar modules.

We also typically 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 labeled power output rating during the first 10 years following their installation and at least 80% of their labeled 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 modules or, under the power output warranty, providing additional solar modules to remedy the power shortfall. We also have the option to make a payment for the then current market price for solar modules to resolve claims. Our warranties are automatically transferred from the original purchasers of our solar modules to subsequent purchasers upon resale.

As an alternative to our module power output warranty, we have offered a system level module performance warranty for a limited number of our recent system sales. This system level module performance warranty is designed for utility scale systems and provides 25-year plant-level energy degradation protection. The system level module performance warranty is typically calculated as a percentage of a system's expected energy production, adjusted for certain actual site conditions including weather, with the warranted level of performance declining each year in a linear fashion, but never falling below 80% during the term of the warranty. In resolving claims under the system level module performance warranty to restore the system to warranted performance levels, we first must validate that the root cause is due to module performance, then we typically have the option of either repairing or replacing modules, providing supplemental modules or making a cash payment. Consistent with our module power output warranty, when we elect to satisfy a valid warranty claim by providing replacement or supplement modules under the system level module performance warranty, we do not have any obligation to pay for the labor to remove or install modules.

In addition to our solar module warranty described above, for solar power plants built by our systems business, we typically provide a limited warranty on the balance of the system against defects in engineering design, installation, and workmanship for a period of one to two years following the substantial completion of a phase or the entire solar power plant. In resolving claims under the engineering design, installation, and workmanship warranties, we have the option of remedying the defect through repair, or replacement.

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

From time to time we have taken remediation actions in respect of affected modules beyond our limited warranty, and we may elect to do so in the future, in which case we would incur additional expenses that are beyond our limited warranty, which may be material to our consolidated statement of operations.

Accrued Solar Module Collection and Recycling Liability. We recognize an expense at the time of sale for the estimated cost of our future obligations for collecting and recycling the solar modules covered by our collection and recycling program. See Note 15. "Solar Module Collection and Recycling Liability," for further information.

Income Taxes. We account for income taxes in accordance with ASC 740, Income Taxes, which prescribes the use of the asset and liability method whereby we calculate the deferred tax asset or liability account balances at the consolidated balance sheet date using tax laws and rates in effect at that time. We establish valuation allowances, when necessary, to reduce deferred tax assets to the extent it is more-likely-than-not that such deferred tax assets will not be realized. We do not provide deferred taxes related to the U.S. GAAP basis in excess of the U.S. tax basis in the investment in our foreign subsidiaries to the extent such amounts relate to indefinitely reinvested earnings and profits of such foreign subsidiaries.

In accordance with ASC 740, income tax expense includes (i) deferred tax expense, which generally represents the net change in the deferred tax asset or liability balance during the year plus any change in valuation allowances, and (ii) current tax expense, which represents the amount of tax currently payable to or receivable from a taxing authority. We only recognize tax benefits related to uncertain tax positions to the extent they satisfy the recognition and measurement criteria under ASC 740. Only those uncertain tax positions that are more-likely-than-not of being sustained upon examination satisfy the recognition criteria. For those positions that satisfy the recognition criteria, the amount of tax benefit that we recognize is the largest amount of tax benefit that is more than fifty percent likely of being sustained on ultimate settlement of such uncertain tax position.

Foreign Currency Translation. The functional currencies of certain of our international subsidiaries are their local currency. Accordingly, we apply the period end exchange rate to translate their assets and liabilities and the average exchange rate for the period to translate their revenues, expenses, gains, and losses into U.S. dollars. We include the translation adjustments as a separate component of accumulated other comprehensive income within stockholders' equity. The functional currency of our subsidiaries in Canada, Malaysia, Singapore, and Chile is the U.S. dollar; therefore, we do not translate their financial statements.

Comprehensive Income. Our comprehensive income consists of our net income, changes in unrealized gains or losses on derivative instruments that qualify for and have been designated as cash flow hedges, and the effects on our consolidated financial statements of translating the financial statements of our subsidiaries that operate in foreign currencies. In addition, comprehensive income includes unrealized gains or losses on available-for-sale marketable securities and restricted investments, the impact of which has been excluded from net (loss) income. We present our comprehensive income (loss) in the consolidated statement of comprehensive income (loss). Our accumulated other comprehensive income is presented as a component of stockholders' equity in our consolidated balance sheets and consists of the cumulative amount of net financial statement translation adjustments, unrealized gains or losses on cash flow hedges, and unrealized gains or losses on available-for-sale marketable securities and restricted investments that we have incurred since the inception of our business.

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

Revenue Recognition — Systems Business. We recognize revenue for arrangements entered into by our systems business generally using two revenue recognition models, following the guidance in ASC 605, Accounting for Long-term Construction Contracts or, for arrangements which include land or land rights, ASC 360, Accounting for Sales of Real Estate.

For systems business sales arrangements that do not include land or land rights and thus are accounted for under ASC 605, we use the percentage-of-completion method, as described further below, using actual costs incurred over total estimated costs to develop and construct a project (including module costs) as our standard accounting policy, unless we cannot make reasonably dependable estimates of the costs to complete the contract, in which case we would use the completed contract method.

For systems business sales arrangements that are accounted for under ASC 360 where we have gained control of land or land rights, we record the sale as revenue using one of the following revenue recognition methods, based upon the substance and form of the terms and conditions of such sales arrangements:

(i) We apply the percentage-of-completion method, as further described below, to certain sales arrangements covered under ASC 360, when a sale has been consummated, we have transferred the usual risks and rewards of ownership to the buyer, the initial and continuing investment criteria have been met, we have the ability to estimate our costs and progress toward completion, and all other revenue recognition criteria have been met. The initial and continuing investment requirements, which demonstrate a buyer's commitment to honor their obligations for the sales arrangement, can be met through the receipt of cash or an irrevocable letter of credit from a highly credit worthy lending institution.

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

(iii)We may also record revenue for certain sales arrangements after construction of a project is substantially complete, we have transferred the usual risks and rewards of ownership to the buyer, and we have received substantially all payments due from the buyer.

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

Revenue Recognition - Percentage-of-Completion. In applying the percentage-of-completion method we use the actual costs incurred relative to estimated costs to complete (including modules) in order to estimate the progress towards completion to determine the amount of revenue and profit to recognize. Incurred costs include all installed direct materials, installed solar modules, labor, subcontractor costs, and those indirect costs related to contract performance, such as indirect labor, supplies, and tools. We recognize direct material and solar module costs as incurred costs when the direct materials and solar modules have been installed in the project. When contracts specify that title to direct materials and solar modules transfers to the customer before installation has been performed, we will not recognize revenue or associated costs until those materials are installed and have met

all other revenue recognition requirements. We consider direct materials and solar modules to be installed when they are permanently attached or fitted to the solar power systems as required by engineering designs. Solar modules that will be used in our solar power systems, which we still hold title to, remain within inventory until such modules are installed in a solar power system.

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

If estimated total costs on any contract are greater than the contract revenues, we recognize the entire estimated loss in the period the loss becomes known. The cumulative effect of the revisions to estimates related to contract revenues and costs to complete contracts, including penalties, incentive awards, claims, change orders, anticipated losses and others are recorded in the period in which the revisions to estimates are identified and the loss can be reasonably estimated. Such revisions could occur in any reporting period and the effects may be material depending on the size of the contract or the adjustment.

Revenue Recognition - Components Business. Our components segment sells solar modules directly to third party solar power system integrators and operators. We recognize revenue when persuasive evidence of an arrangement exists, delivery of the product has occurred and title and risk of loss have passed to the customer, the sales price is fixed or determinable, and the collectability of the resulting receivable is reasonably assured. Under this policy, we record a trade receivable for the selling price of our product and reduce inventory for the cost of goods sold when delivery occurs in accordance with the terms of the sales contracts. We do not offer unsecured extended payment terms or rights of return for our products. We account for rebates or other customer incentives as a reduction to the selling price of our solar modules at the time of sale; and therefore, as a reduction to revenue.

Research and Development Expense. We incur research and development costs during the process of researching and developing new products and enhancing our existing products, technologies, and manufacturing processes. Our research and development costs consist primarily of compensation and related costs for personnel, materials, supplies, equipment depreciation, and consultant and laboratory testing costs. We expense these costs as incurred until the resulting product has been completed, is tested, and is ready for commercial manufacturing.

Restructuring and Exit Activities. We account for employee termination benefits that represent a one-time benefit in accordance with ASC 420, Exit or Disposal Cost Obligations. We record such costs into expense over the employee's future service period beyond any minimum retention period. Other costs associated with restructuring or exit activities may include contract termination costs and impairments of long-lived assets, which are expensed in accordance with ASC 420 and ASC 360. respectively.

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

Share-Based Compensation. We account for share-based compensation arrangements in accordance with ASC 718, Compensation – Stock Compensation. Our significant accounting policies related to share-based compensation arrangements are described in Note 19. "Share-Based Compensation," to our consolidated financial statements.

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

Advertising Costs. Advertising costs are expensed as incurred. Advertising costs during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 were $1.4 million, $2.0 million, and $1.1 million, respectively.

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

Retainage. Certain of the EPC contracts for solar power plants we build contain retainage provisions. Retainage refers to the

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

Note 3. Recent Accounting Pronouncements

In April 2011, the Financial Accounting Standards Board ("FASB") issued ASU 2011-04, Fair Value Measurement (Topic 820): Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS. This ASU amends current fair value measurement and disclosure guidance to include increased transparency around valuation input and investment categorization. ASU 2011-04 was effective for fiscal years and interim periods beginning after December 15, 2011, with early adoption not permitted. The adoption of ASU 2011-04 did not have an impact on our financial position, results of operations, or cash flows.

In June 2011, the FASB issued ASU 2011-05, Comprehensive Income (Topic 220): Presentation of Comprehensive Income. ASU 2011-05 allows an entity to present components of net income and other comprehensive income in one continuous statement, referred to as the statement of comprehensive income, or in two separate, but consecutive statements. ASU 2011-05 eliminates the option to present the components of other comprehensive income as part of the statement of changes in stockholders' equity. In December 2011, the FASB issued ASU 2011-12 "Comprehensive Income (Topic 220): Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05." ASU 2011-12 deferred the effective date of the specific requirement to present items that are reclassified out of accumulated other comprehensive income to net income alongside their respective components of net income and other comprehensive income. While the new guidance changes the presentation of comprehensive income, there are no changes to the components that are recognized in net income or other comprehensive income under current accounting guidance. ASU 2011-05 was effective for fiscal years and interim periods beginning after December 15, 2011 and must be applied retrospectively. The adoption of ASU 2011-05 did not have an impact on our financial position, results of operations, or cash flows.

In December 2011, the FASB issued ASU 2011-11, Balance Sheet (Topic 210), Disclosures about Offsetting Assets and Liabilities, which requires companies to disclose information about financial instruments that have been offset and related arrangements to enable users of their financial statements to understand the effect of those arrangements on their financial position. Companies will be required to provide both net (offset amounts) and gross information in the notes to the financial statements for relevant assets and liabilities that are offset. ASU 2011-11 is effective for fiscal years, and interim periods within those years, beginning on or after January 1, 2013. We do not expect the adoption of ASU 2011-11 in the first quarter of 2013 to have an impact on our financial position, results of operations, or cash flows.

In July 2012, the FASB issued ASU 2012-02, Intangibles - Goodwill and Other (Topic 350), Testing Indefinite-Lived Intangible Assets for Impairment. ASU 2012-02 gives companies an option to first assess qualitative factors to determine whether the existence of events and circumstances indicate it is more-likely-than-not that an indefinite-lived intangible asset (excluding goodwill) is impaired. If based on its qualitative assessment, a company concludes that it is more-likely-than-not that the fair value of an indefinite-lived intangible asset is less than its carrying amount, quantitative impairment testing is required. However, if a company concludes otherwise, quantitative impairment testing is not required. ASU 2012-02 is effective for annual and interim impairment tests performed for fiscal years beginning after September 15, 2012, with early adoption permitted. We do not expect the adoption of ASU 2012-02 in

the first quarter of 2013 to have an impact on our financial position, results of operations, or cash flows.

In February 2013, the FASB issued ASU 2013-02, Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income. ASU 2013-02 supersedes and replaces the presentation requirements for reclassifications out of accumulated other comprehensive income in ASUs 2011-05 and 2011-12 for all public and private organizations. The amendment requires that an entity must report the effect of significant reclassifications out of accumulated other comprehensive income on the respective line items in net income if the amount being reclassified is required under U.S. GAAP. For other amounts that are not required under U.S. GAAP to be reclassified in their entirety to net income in the same reporting period, an entity is required to cross-reference other disclosures required under U.S. GAAP that provide additional detail about those amounts. ASU 2013-02 is effective for fiscal years, and interim periods within those years, beginning on or after December 15, 2012. We do not expect the adoption of ASU 2013-02 in the first quarter of 2013 to have an impact on our financial position, results of operations or cash flows.

Note 4. Restructuring

December 2011 Restructuring

In December 2011, executive management approved a set of restructuring initiatives intended to accelerate operating cost reductions and improve overall operating efficiency. In connection with these restructuring initiatives, we incurred in December 2011 and all of 2012 total charges to operating expense of $60.5 million. These charges consisted primarily of (i) $52.2 million of asset impairment and related charges due to a significant reduction in certain research and development activities that had been focused on an alternative PV product, and (ii) $8.3 million in severance benefits to terminated employees as described below, substantially all of which was paid out by the end of 2012.

We have refocused our research and development center in Santa Clara, California on the development of advanced cadmium telluride ("CdTe") PV technologies, compared to a broader research and development effort prior to December 2011. We eliminated approximately 100 positions company-wide as part of the restructuring initiatives. The related long-lived assets were considered abandoned for accounting purposes and were impaired to their estimated salvage value as of December 31, 2011.

The following table summarizes the activity for the years ended December 31, 2012 and December 31, 2011, and the balances at December 31, 2012 and December 31, 2011 (in thousands):

December 2011 Restructuring	Asset Impairments	Asset Impairment Related Costs	Severance and Termination Related Costs	Total
Charges to Income	$50,298	3,261	6,807	$60,366
Changes in Estimates	—	—	—	$—
Cash Payments	—	—	—	$—
Non-cash Amounts	(50,298)	(915)	—	$(51,213)
Ending Balance at December 31, 2011	—	2,346	6,807	$9,153
Charges to Income	747	—	1,480	2,227
Changes in Estimates	—	(2,104)	—	(2,104)
Cash Payments	—	(242)	(7,857)	(8,099)
Non-cash Amounts	(747)	—	(430)	(1,177)
Ending Balance at December 31, 2012	$—	$—	$—	$—

Expenses recognized for the December 2011 restructuring activities are presented in "Restructuring" on the consolidated statements of operations. Substantially all expenses related to the December 2011 restructuring were related to our components segment. We do not expect to incur any additional expense for the December 2011 restructuring initiatives.

February 2012 Manufacturing Restructuring

In February 2012, executive management completed an evaluation of and approved a set of manufacturing capacity and other initiatives primarily intended to adjust our previously planned manufacturing capacity expansions and global manufacturing footprint. The primary goal of these initiatives was to better align production capacity and geographic location of such capacity with expected geographic market requirements and demand. In connection with these initiatives, we incurred total charges to operating expense of $127.0 million during the year ended December 31, 2012. These charges consist primarily of (i) $99.2 million of asset impairment and asset impairment related charges due to our decision not to proceed with our 4-line manufacturing plant in Vietnam, (ii) $20.8 million of asset impairment and asset impairment related charges due to our decision to cease use of certain manufacturing machinery and equipment intended for use in the production of certain components of our solar modules, and (iii) $7.0 million of

asset impairment and asset impairment related charges primarily due to our decision to cease use of certain other long-lived assets.

Based upon expected future market demand and our focus on providing utility-scale PV generation solutions primarily to sustainable geographic markets, we decided not to proceed with our previously announced 4-line plant in Vietnam. As of March 31, 2012, the plant was considered and classified as an asset held for sale, and a corresponding impairment charge of $92.2 million was recorded. The carrying amount of the Vietnam plant represents the fair value of the plant less expected costs to sell, with fair value being determined based upon a weighted approach using both the cost and income methods of valuation using market participant assumptions based primarily on observable inputs including property square footage, market ground lease rates, market rental rates, consumer price index inflation rates, and market interest rates. Such fair value measurements are considered Level 2 measurements within the fair value hierarchy.

Additionally, certain manufacturing machinery and equipment intended for use in the production of certain components of our solar modules and certain other long-lived assets were considered abandoned for accounting purposes. As a result, we recorded an impairment charge of $34.8 million.

The following table summarizes the February 2012 manufacturing restructuring activity recorded during the year ended December 31, 2012 and the remaining balance at December 31, 2012 (in thousands):

February 2012 Restructuring	Asset Impairments	Asset Impairment Related Costs	Total
Charges to Income	$122,765	$8,479	$131,244
Changes in Estimates	519	(246)	273
Gain on Sale of Previously Impaired Assets	(4,524)	—	(4,524)
Cash Payments	—	(292)	(292)
Cash Received on Sale of Impaired Assets	4,524	—	4,524
Non-cash Amounts	(123,284)	(2,840)	(126,124)
Ending Balance at December 31, 2012	$—	$5,101	$5,101

Expenses recognized for the February 2012 restructuring activities are presented in “Restructuring” on the consolidated statements of operations. All expenses related to the February 2012 manufacturing restructuring were related to our components segment. We do not expect to incur any additional expense for the February 2012 manufacturing restructuring initiatives.

April 2012 European Restructuring

In April 2012, executive management approved a set of restructuring initiatives intended to align the organization with our Long Term Strategic Plan including expected sustainable market opportunities and to reduce costs. As part of these initiatives, we substantially reduced our European operations including the closure of our manufacturing operations in Frankfurt (Oder), Germany at the end of 2012. Due to the lack of policy support for utility-scale solar projects in Europe, we did not believe there was a business case for continuing manufacturing operations in Germany or to proceed with the previously announced 2-line plant in France. Additionally, we substantially reduced the size of our operations in Mainz, Germany and elsewhere in Europe. We also temporarily idled the capacity of four production lines at our manufacturing center in Kulim, Malaysia in May 2012. These actions, when completed in the first half of 2013, combined with additional reductions in administrative and other staff in North America, will reduce First Solar’s workforce by approximately 2,000 associates. After the closure of our Frankfurt (Oder) manufacturing operations at the end of 2012, First Solar’s manufacturing operations consist of 24 production lines in Kulim, Malaysia and four production lines in Perrysburg, Ohio.

The restructuring and related initiatives resulted in total charges of $342.0 million for the year ended December 31, 2012, including: (i) $251.8 million in asset impairments and related charges, primarily related to the closure of the Frankfurt (Oder) plants; (ii) $59.7 million in severance and termination related costs primarily related to the reductions in force in Germany and North America; and (iii) $30.5 million for the required repayment of German government grants related to the second Frankfurt (Oder) plant.

Based primarily upon expected future market demand and the lack of policy support for utility-scale solar projects in Europe, we did not believe there was a business case for continuing manufacturing operations in Germany. We concluded that an impairment indicator existed as of March 31, 2012 related to our asset group that includes our manufacturing operations in Germany as it was considered more-likely-than-not that operations for such asset group would be closed, and accordingly we performed a recoverability test in accordance with ASC 360. In performing the recoverability test, we concluded that the long-lived asset group was not recoverable after comparing the undiscounted

future cash flows based on our own expected use and eventual disposition of the asset group at market value, to the asset group's carrying value. Such recoverability test included future cash flow assumptions that contemplated the potential closure of our manufacturing operations in Germany at the end of 2012.

As the asset group was not considered recoverable, we determined the fair value of the long-lived assets in the asset group in accordance with ASC 360 and ASC 820 based primarily on the cost method of valuation for the personal property and a weighted income method of valuation for the real property. Such fair value measurements for the personal and real property are considered Level 3 and Level 2 fair value measurements in the fair value hierarchy, respectively. Significant unobservable inputs for the personal property fair value measurement under the cost method included average normal useful lives, salvage values, marketability discount, and installation penalties. The carrying amount of the Frankfurt (Oder) personal property was $13.5 million at

December 31, 2012.

We recorded an impairment charge of $225.7 million primarily related to the long-lived assets at our Frankfurt (Oder) plant. As the long-lived assets for our Frankfurt (Oder) plant are considered held and used under ASC 360, we continue to record depreciation expense over the estimated useful life of such assets using the new cost basis.

The following table summarizes the April 2012 European restructuring activity recorded during the year ended December 31, 2012 and the remaining balance at December 31, 2012 (in thousands):

April 2012 Restructuring	Asset Impairments	Asset Impairment Related Costs	Severance and Termination Related Costs	Grant Repayments	Total
Charges to Income	$225,716	$26,356	$60,629	$ 30,510	$343,211
Changes in Estimates	—	(289)	(937)	—	(1,226)
Cash Payments	—	(9,313)	(32,087)	(7,044)	(48,444)
Non-cash Amounts	(225,716)	(129)	(1,888)	(15,066)	(242,799)
Ending Balance at December 31, 2012	$—	$16,625	$25,717	$ 8,400	$50,742

Expenses recognized for the April 2012 restructuring activities are presented in “Restructuring” on the consolidated statements of operations. Substantially all expenses related to the April 2012 restructuring were related to our components segment. We expect to incur up to $10 million related to remaining severance and termination related costs and asset impairment related costs associated with the remaining plant closure activities for our Frankfurt (Oder) manufacturing operations. Additionally, as all manufacturing operations have closed by the end of 2012, the salary and related expense for the remaining Frankfurt (Oder) employees who are exclusively working on the closure activities of such operations will also be classified as period restructuring expense.

Note 5. Acquisitions

2011 Acquisition

Ray Tracker

On January 4, 2011, we acquired 100% of the ownership interest of Ray Tracker, Inc., a tracking technology and PV BoS business in an all-cash transaction, which was not material to our consolidated balance sheets and results of operations. We have included the financial results of Ray Tracker in our consolidated financial statements from the date of acquisition.

2010 Acquisition

NextLight Renewable Power

On July 12, 2010, we completed the acquisition of NextLight Renewable Power, LLC (“NextLight”), a leading developer of utility-scale solar projects in the southwestern United States. This transaction expanded our pipeline of solar power projects in the southwestern United States and supports our expansion in the U.S. utility-scale power market. We have integrated NextLight into our systems business.

Purchase Price Consideration

The total consideration for this acquisition was $296.7 million in an all-cash transaction.

Purchase Price Allocation

We accounted for this acquisition using the acquisition method in accordance with ASC 805, Business Combinations. Accordingly, we allocated the purchase price of the acquired assets and liabilities based on their estimated fair values at the acquisition date (July 12, 2010) as summarized in the following table (in thousands):

Tangible assets acquired	$2,513
Project assets	147,370
Deferred tax assets	84
Goodwill	146,773
Total purchase consideration	$296,740

The fair value of net tangible assets acquired on July 12, 2010 consisted of the following (in thousands):

Cash	$244
Prepaid expenses and other current assets	346
Property, plant and equipment	996
Land	3,380
Total tangible assets acquired	4,966
Accounts payable and other liabilities	(2,453)
Total liabilities assumed	(2,453)
Net tangible assets acquired	$2,513

Acquisition Related Costs

Acquisition related costs recognized in the year ended December 31, 2010 included transaction costs, which we have classified in selling, general and administrative expense in our consolidated statements of operations. During the fiscal year ended December 31, 2010, transaction costs such as legal, accounting, valuation, and other professional services were $1.9 million.

Pro Forma Information (Unaudited)

NextLight had been engaged in the development of solar power projects but had not reached the point of sale for any of the projects as of the acquisition date. The pre-tax loss of NextLight for the period from January 1 to July 12, 2010 and for the 12 months ended December 31, 2009 was $9.1 million and $13.4 million, respectively. Therefore, had the acquisition of NextLight occurred on December 27, 2009 (the first day of our fiscal year 2010), our reported net sales would not have changed and our reported net income would not have materially changed from the amounts previously reported.

Note 6. Goodwill and Intangible Assets

Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2012 and December 31, 2011 were as follows (in thousands):

	Components	Systems	Consolidated
Ending balance, December 31, 2010	$393,365	$39,923	$433,288
Goodwill from acquisition	—	25,521	25,521
Goodwill impairment	(393,365)	—	(393,365)
Ending balance, December 31, 2011	$—	$65,444	$65,444
Ending balance, December 31, 2012	$—	$65,444	$65,444

Goodwill represents the excess of the purchase price of acquired businesses over the estimated fair value assigned to the individual assets acquired and liabilities assumed. We do not amortize goodwill, but instead are required to test goodwill for impairment at least annually in the fourth quarter and, if necessary, we would record any impairment in accordance with ASC 350, Intangibles - Goodwill and Other. We will perform an impairment test between scheduled

annual tests if facts and circumstances indicate that it is more-likely-than-not that the fair value of a reporting unit that has goodwill is less than its carrying value. See Note 2. “Summary of Significant Accounting Policies,” for details on our policy on goodwill impairment testing.

In estimating the fair value of our reporting units in the first step of the impairment test, significant management judgment is required. In using the income approach methodology of valuation, our estimates to determine the fair value of our reporting units includes management judgment related to forecasts of future operating results, discount rates, and expected future growth

rates that are used in the discounted cash flow method of valuation. In using the market approach methodology of valuation, we must make judgments related to the selection of comparable businesses and related financial multiples. The sum of the fair values of our reporting units is also compared to our external market capitalization in order for us to assess the appropriateness of such estimates.

2012 Goodwill Impairment Testing

Our annual impairment analysis was performed in the fourth quarter of 2012, and in accordance with ASC 350, we elected to move directly to the first-step of the two-step goodwill impairment test instead of first performing a qualitative goodwill impairment test. We determined that the carrying amount of our goodwill for our systems reporting unit was recoverable and the results of the impairment test indicated a fair value significantly in excess of the carrying value.

The underlying assumptions used in the first step of our 2012 impairment test considered our market capitalization as of December 31, 2012 and the current solar industry market conditions when determining the fair value of our reporting units.

2011 Goodwill Impairment Testing

During the first step of our annual impairment analysis in the fourth quarter of 2011, we determined that the fair value of our systems reporting unit exceeded the carrying value by a significant amount indicating no impairment. We also determined that the carrying value of the goodwill related to our components reporting unit might not have been recoverable. Thus, the second step of the impairment test was performed to determine the implied fair value of goodwill for the components reporting unit based on allocating the fair value of the components reporting unit determined in the first step to all of the assets and liabilities including any unrecognized intangible assets of the components reporting unit. Based on the second step results, we determined the implied fair value of goodwill in the component reporting unit was zero. As a result, we impaired all of the goodwill in the components reporting unit and recorded $393.4 million of impairment expense, which also represents our accumulated goodwill impairment losses.

2010 Goodwill Impairment Testing

We recorded no goodwill impairment charges for the year ended December 31, 2010.

Intangible Assets

Included in “Prepaid expenses and other current assets” or “Other assets” on our consolidated balance sheets are acquired intangible assets primarily related to module or BoS technologies. Also included in such captions are internally-generated intangible assets, substantially all of which are patents on technologies related to our products and production processes. We record an asset for patents, after the patent has been issued, based on the legal, filing, and other costs incurred to secure them. We amortize intangible assets on a straight-line basis over their estimated useful lives.

Amortization expense for our intangible assets was $2.1 million, $2.0 million, and $0.1 million for the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively. These intangible assets consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Intangible assets, gross	$ 9,139	$ 6,135
Accumulated amortization	(5,404)	(3,280)

Intangible assets, net	$ 3,735	$ 2,855

Estimated future amortization expense for our intangible assets is as follows at December 31, 2012 (in thousands):

2013	$393
2014	393
2015	392
2016	389
2017	356
Thereafter	1,812
Total estimated future amortization expense	$3,735

Note 7. Cash, Cash Equivalents, and Marketable Securities

Cash, cash equivalents, and marketable securities and investments consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Cash and cash equivalents:		
Cash	$ 889,065	$ 579,241
Cash equivalents:		
Commercial paper	1,500	—
Money market mutual funds	10,729	26,378
Total cash and cash equivalents	901,294	605,619
Marketable securities:		
Commercial paper	1,698	9,193
Corporate debt securities	23,384	55,011
Federal agency debt	29,936	50,081
Foreign agency debt	7,233	10,928
Foreign government obligations	4,142	9,120
Supranational debt	34,181	45,991
U.S. government obligations	2,004	2,014
Total marketable securities and investments	102,578	182,338
Total cash, cash equivalents, marketable securities and investments	$ 1,003,872	$ 787,957

During the year ended December 31, 2012, we realized an immaterial amount in gains and losses from our marketable securities. During the year ended December 31, 2011, we realized $0.9 million in gains and an immaterial amount in losses on our marketable securities. During the year ended December 31, 2010, we realized $0.9 million in gains and $0.6 million in losses on our marketable securities. See Note 2. “Summary of Significant Accounting Policies,” to our consolidated financial statements for information about the fair value measurement of our marketable securities.

As of December 31, 2012, we identified two investments totaling $6.0 million with immaterial unrealized losses that have been in a loss position for a period of time greater than 12 months. The unrealized loss is primarily due to an increase in market spreads relative to spreads at the time of purchase. Based on the underlying credit quality of the investments, we do not intend to sell these securities prior to recovery of our cost basis. Therefore, we did not consider these securities to be other-than-temporarily impaired. Market valuations and impairment analysis on assets in the available-for-sale securities portfolio are reviewed and evaluated on a quarterly basis. We did not identify any of our marketable securities as other-than-temporarily impaired at December 31, 2012 and December 31, 2011.

The following tables summarize the unrealized gains and losses related to our available-for-sale marketable securities, by major security type, as of December 31, 2012 and December 31, 2011 (in thousands):

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	As of December 31, 2012			
Security Type	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$1,697	$1	$—	$1,698
Corporate debt securities	23,358	26	—	23,384
Federal agency debt	29,888	49	1	29,936
Foreign agency debt	7,266	—	33	7,233
Foreign government obligations	4,138	4	—	4,142
Supranational debt	34,110	71	—	34,181
U.S. government obligations	2,000	4	—	2,004
Total	$102,457	$155	$34	$102,578

	As of December 31, 2011			
Security Type	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Commercial paper	$9,192	$1	$—	$9,193
Corporate debt securities	55,150	13	152	55,011
Federal agency debt	50,035	54	8	50,081
Foreign agency debt	11,473	—	545	10,928
Foreign government obligations	9,128	1	9	9,120
Supranational debt	46,380	—	389	45,991
U.S. government obligations	1,999	15	—	2,014
Total	$183,357	$84	$1,103	$182,338

Contractual maturities of our available-for-sale marketable securities as of December 31, 2012 and December 31, 2011 were as follows (in thousands):

	As of December 31, 2012			
Maturity	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
One year or less	$71,225	$67	$32	$71,260
One year to two years	30,707	88	1	30,794
Two years to three years	525	—	1	524
Total	$102,457	$155	$34	$102,578

	As of December 31, 2011			
Maturity	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
One year or less	$66,146	$30	$30	$66,146
One year to two years	97,538	54	854	96,738
Two years to three years	19,673	—	219	19,454
Total	$183,357	$84	$1,103	$182,338

The net unrealized gain of $0.1 million and loss of $1.0 million as of December 31, 2012 and December 31, 2011, respectively, on our available-for-sale marketable securities were primarily the result of changes in interest rates. We typically invest in highly-rated securities with low probabilities of default. Our investment policy requires investments

to be highly rated and limits the security types, issuer concentration, and duration to maturity of our marketable securities portfolio.

The following table shows gross unrealized losses and estimated fair values for those marketable securities that were in an unrealized loss position as of December 31, 2012 and December 31, 2011, aggregated by major security type and the length of time that individual securities have been in a continuous loss position (in thousands):

	As of December 31, 2012					
	In Loss Position for Less Than 12 Months		In Loss Position for 12 Months or Greater		Total	
Security Type	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Corporate debt securities	$—	$—	$—	$—	$—	$—
Federal agency debt	524	1	—	—	524	1
Foreign agency debt	—	—	5,970	33	5,970	33
Foreign government obligations	—	—	—	—	—	—
Supranational debt	—	—	—	—	—	—
Total	$524	$1	$5,970	$33	$6,494	$34

	As of December 31, 2011					
	In Loss Position for Less Than 12 Months		In Loss Position for 12 Months or Greater		Total	
Security Type	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Corporate debt securities	$47,763	$152	$—	$—	$47,763	$152
Federal agency debt	6,744	8	—	—	6,744	8
Foreign agency debt	8,176	545	—	—	8,176	545
Foreign government obligations	6,361	9	—	—	6,361	9
Supranational debt	45,991	389	—	—	45,991	389
Total	$115,035	$1,103	$—	$—	$115,035	$1,103

Note 8. Restricted Cash and Investments

Restricted cash and investments consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Restricted cash, noncurrent	$ 184	$ 21,735
Restricted investments, noncurrent	301,216	178,815
Total restricted cash and investments, noncurrent (1)	$ 301,400	$ 200,550

(1) There is $5.1 million of restricted cash included within prepaid expenses and other current assets at December 31, 2012 primarily related to required cash collateral for certain letters of credit provided for projects under development in foreign jurisdictions. We had no restricted cash included within prepaid expenses and other current assets at December 31, 2011.

On May 18, 2011, in connection with the plant expansion at our German manufacturing center, First Solar Manufacturing GmbH (“FSM GmbH”), our indirect wholly owned subsidiary, entered into a credit facility agreement (German Facility Agreement), as disclosed in Note 16. “Debt,” to these consolidated financial statements. Pursuant to the German Facility Agreement, FSM GmbH was required to maintain a euro-denominated debt service reserve account in the amount of €16.6 million pledged in favor of the lenders. The account was available solely to pay any outstanding interest and principal payments owed under the German Facility Agreement. In April 2012, we repaid the entire balance outstanding under the German Facility Agreement and the restriction on the cash related to such debt service reserve account was removed and the restricted cash was reclassified to cash and cash equivalents. See Note

16. “Debt,” for further information.

At December 31, 2012 and December 31, 2011, our restricted investments consisted of long-term marketable securities that we hold through a custodial account to fund the estimated future costs of our solar module collection and recycling obligations. See Note 2. “Summary of Significant Accounting Policies,” to our consolidated financial statements for information about the fair value measurements and accounting policies for our restricted investments.

We have classified our restricted investments as “available-for-sale.” Accordingly, we record them at fair value and account for net unrealized gains and losses as a part of accumulated other comprehensive income. We report realized gains and losses on the maturity or sale of our restricted investments in earnings, computed using the specific identification method.

We fund the estimated collection and recycling cost incremental to amounts already pre-funded in prior years for the cumulative module sales covered by the program within 90 days of the end of each year, assuming for this purpose a minimum service life of 25 years for our solar modules. To ensure that our collection and recycling program for covered modules is available at all times and the pre-funded amounts are accessible regardless of our financial status in the future (even in the case of our own insolvency), we have established a trust structure under which funds are put into custodial accounts with a large bank as the investment advisor in the name of a trust, for which First Solar, Inc. ("FSI"), First Solar Malaysia Sdn. Bhd. ("FS Malaysia"), and FSM GmbH are grantors. Only the trustee can distribute funds from the custodial accounts and these funds cannot be accessed for any purpose other than to cover qualified costs of module collection and recycling, either by us or a third party executing the collection and recycling services. Investments in this custodial account must meet the criteria of the highest quality investments, such as highly rated government or agency bonds. We closely monitor our exposure to European markets and maintain holdings of German and French sovereign debt securities which are not currently at risk of default. Under the trust agreements, each year we determine the annual pre-funding requirement based upon the difference between the current estimated future costs of collecting and recycling all solar modules covered under our program combined with the rate of return restricted investments will earn prior to being utilized to cover qualified collection and recycling costs and amounts already pre-funded in prior years.

The following table summarizes unrealized gains and losses related to our restricted investments by major security type as of December 31, 2012 and December 31, 2011 (in thousands):

	As of December 31, 2012			
Security Type	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign government obligations	$188,350	$47,921	$—	$236,271
U.S. government obligations	53,368	11,577	—	64,945
Total	$241,718	$59,498	$—	$301,216

	As of December 31, 2011			
Security Type	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Foreign government obligations	$132,734	$23,102	$—	$155,836
U.S. government obligations	15,825	7,154	—	22,979
Total	$148,559	$30,256	$—	$178,815

As of December 31, 2012, the contractual maturities of these restricted investments were between 15 years and 24 years. As of December 31, 2011, the contractual maturities of these restricted investments were between 16 years and 24 years.

Note 9. Consolidated Balance Sheet Details

See Note 2. "Summary of Significant Accounting Policies," for further discussion of our significant accounting policies.

Accounts receivable trade, net

Accounts receivable trade, net consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Accounts receivable trade, gross	$ 568,070	$ 320,600
Allowance for doubtful accounts	(14,503)	(10,032)
Accounts receivable trade, net	$ 553,567	$ 310,568

At December 31, 2012, $104.5 million of our Accounts receivable trade, net, were secured by letters of credit, bank guarantees or other forms of financial security issued by credit worthy financial institutions.

Our historical solar module rebate program offered to certain customers ended as of September 30, 2011. Subsequent sales of solar modules are based upon a sales price without such rebate program. At December 31, 2011, we had $1.4 million of rebate claims accrued, which reduced our accounts receivable accordingly. There were no outstanding rebates as of December 31, 2012.

Accounts receivable, unbilled

Accounts receivable, unbilled was $401.0 million (including $58.4 million of retainage) and $533.4 million (including $35.4 million of retainage) at December 31, 2012 and December 31, 2011, respectively. We expect to bill and collect accounts receivable, unbilled within the next 12 months.

Included within Accounts receivable, unbilled is the current portion of retainage. Retainage refers to the portion of the contract price earned by us for work performed, but held for payment by our customer as a form of security until we reach certain construction milestones.

Inventories

Inventories consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Raw materials	$ 184,006	$ 230,675
Work in process	14,868	28,817
Finished goods	370,422	277,126
Total inventories	$ 569,296	$ 536,618
Inventories — current	$ 434,921	$ 475,867
Inventories — noncurrent (1)	$ 134,375	$ 60,751

(1) We purchase a critical raw material that is used in our core production process in quantities that exceed anticipated consumption within our operating cycle (which is 12 months). We classify the raw materials that we do not expect to be consumed within our operating cycle as noncurrent. The increase in our noncurrent inventories was primarily the result of a decrease in the amount of such critical raw material we anticipate consuming in our next operating cycle. Such decrease resulted from a combination of the reduction in our manufacturing capacity and the amount of critical raw material for our next operating cycle that is required to be sourced through vendor supply agreements.

Prepaid expenses and other current assets

Prepaid expenses and other current assets consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Prepaid expenses	$ 39,582	$ 151,630
Derivative instruments	7,230	63,673
Deferred costs of goods sold	96,337	1,152
Other assets - current	64,219	112,577
Prepaid expenses and other current assets	$ 207,368	$ 329,032

Property, plant and equipment, net

Property, plant and equipment, net consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Buildings and improvements	$ 446,133	$ 393,676
Machinery and equipment	1,415,632	1,453,293
Office equipment and furniture	117,228	110,936
Leasehold improvements	49,367	48,374
Depreciable property, plant and equipment, gross	2,028,360	2,006,279
Accumulated depreciation	(803,501)	(617,787)
Depreciable property, plant and equipment, net	1,224,859	1,388,492
Land	22,256	8,065
Construction in progress	51,133	419,401
Stored assets (1)	227,134	—
Property, plant and equipment, net	$ 1,525,382	$ 1,815,958

(1) Consists of machinery and equipment ("stored assets") that were originally purchased for installation in our previously planned manufacturing capacity expansions. We intend to install and place the stored assets into service in yet to be determined locations once market demand supports such additional manufacturing capacity. As the stored assets are neither in the condition or location to produce modules as intended, we will not begin depreciation until the assets are placed into service. The stored assets are evaluated for impairment whenever events or changes in business circumstances arise that may indicate that the carrying amount of our long-lived assets may not be recoverable. We ceased the capitalization of interest on such stored assets once they were physically received from the related machinery and equipment vendors.

See Note 12. "Economic Development Funding," to our consolidated financial statements for further information about grants recorded as a reduction to the carrying value of the property, plant and equipment related to the expansion of our manufacturing plant in Frankfurt (Oder), Germany.

Depreciation of property, plant and equipment was $263.3 million, $230.2 million, and $150.5 million for the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

In December 2011, February 2012, and April 2012, we announced a series of restructuring initiatives. As part of these initiatives, certain property, plant and equipment were determined to be impaired and impairment charges were recorded. See Note 4. "Restructuring," for more information on the long-lived asset impairments related to these restructuring initiatives.

Capitalized interest

We capitalized interest costs incurred into our property, plant and equipment or our project assets as follows during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

	2012	2011	2010
Interest cost incurred	$(24,191)	$(15,349)	$(10,069)
Interest cost capitalized – property, plant and equipment	4,201	7,483	6,177
Interest cost capitalized – project assets	6,102	7,766	3,886
Interest expense, net	$(13,888)	$(100)	$(6)

Project assets

Project assets consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Project assets — land	$ 9,164	$ 13,704
Project assets — project acquistion and development costs	157,489	136,251
Project assets — construction costs	192,171	224,926
Project assets	$ 358,824	$ 374,881

Deferred project costs

As of December 31, 2012, deferred project costs were $508.1 million, of which, $21.4 million was classified as current and $486.7 million was classified as noncurrent. As of December 31, 2011, deferred project costs were $320.4 million, of which $197.7 million was classified as current and $122.7 million was classified as noncurrent. We classify deferred project costs as current if completion of the sale and the meeting of all revenue recognition criteria is expected within the next 12 months.

Note receivable

On April 8, 2009, we entered into a credit facility agreement with a solar project entity of one of our customers for an original available amount of €17.5 million to provide financing for a PV power generation facility. The credit facility replaced a bridge loan that we had made to this entity. The credit facility bears interest at 8% per annum and is due on December 31, 2026. As of December 31, 2012 and December 31, 2011, the balance on this credit facility was €7.0 million. The outstanding amount of this credit facility is included within “Other assets” on our consolidated balance sheets.

Other assets

Other assets consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Retainage (1)	$ 270,364	$ —
Other assets - noncurrent	56,452	67,615
Other assets	$ 326,816	$ 67,615

(1) Certain of the EPC contracts for solar power plants we build contain retainage provisions. Retainage refers to the portion of the EPC contract price earned by us for work performed, but held for payment by our customer as a form of security until we reach certain construction milestones. We consider whether collectability of such retainage is reasonably assured in connection with our overall assessment of the collectability of amounts due or that will become due under our EPC contracts. Retainage expected to be collected within the next 12 months is classified within Accounts receivable, unbilled on the consolidated balance sheet. After we have met the EPC contract requirements to bill for retainage, we will reclassify such amounts to Accounts receivable trade, net. Amounts are expected to be collected in 2014 through 2015, after certain construction milestones have been met.

Accrued expenses

Accrued expenses consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Accrued compensation and benefits	$ 105,677	$ 57,480
Accrued property, plant and equipment	20,564	41,015
Accrued inventory	52,408	46,028
Accrued project assets and deferred project costs	76,133	34,837
Product warranty liability	90,581	78,637
Accrued expenses in excess of normal product warranty liability and related expenses (1)	75,020	89,893
Other accrued expenses	134,050	58,769

Accrued expenses	$ 554,433	$ 406,659

(1) $59.2 million of accrued expenses in excess of normal product warranty liability and related expenses as of December 31, 2012, consisted primarily of commitments to certain customers, each related to the manufacturing excursion during the period between June 2008 to June 2009, whereby certain modules manufactured during that time period may experience premature power loss once installed in the field. The accrued expenses as of December 31, 2012 included the following commitments to certain customers, each related to such manufacturing excursion and our related remediation program: (i) $22.5 million in estimated expenses for remediation efforts related to module removal, replacement and logistical services committed to by us beyond the normal product warranty; and (ii) $34.8 million in estimated compensation

payments to customers, under certain circumstances, for power lost prior to remediation of the customer's system under our remediation program.

$15.8 million of accrued expenses in excess of normal product warranty liability and related expenses as of December 31, 2012 consisted of commitments to certain customers related to a workmanship issue potentially affecting a limited number of solar modules manufactured between October 2008 to June 2009. A limited number of the modules manufactured during that time utilized a new material and process to attach the cord plate (junction box) to the module which may not adhere securely over time. We know the serial numbers of the affected modules and have proactively contacted the system owners to repair or replace the potentially impaired modules currently in service in a manner consistent with our normal workmanship warranty. For roof-mounted systems, we will also remove and replace the affected modules at no cost to the system owner, which remediation is in excess of our limited workmanship warranty obligation.

Our best estimate for such remediation programs is based on evaluation and consideration of currently available information, including the estimated number of potentially affected modules in the field, historical experience related to our remediation efforts, customer-provided data related to potentially affected systems, the estimated costs of performing the removal, replacement and logistical services and the post-sale expenses covered under our remediation program. If any of our estimates prove incorrect, we could be required to accrue additional expenses.

Deferred revenue

We recognize deferred revenue as net sales only after all revenue recognition criteria are met. We expect to recognize these amounts as net sales within the next 12 months.

Other current liabilities

Other current liabilities consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Derivative instruments	$ 5,825	$ 37,342
Deferred tax liabilities	2,226	6,612
Billings in excess of costs and estimated earnings	2,422	32,204
Payments and billings for deferred project costs and deferred cost of sales (1)	94,535	192,440
Other liabilities - current	21,824	26,048
Other current liabilities	$ 126,832	$ 294,646

(1) Payments and billings for deferred project costs and deferred cost of sales represent customer payments received or customer billings made under the terms of solar power project related sales contracts for which all revenue recognition criteria for real estate transactions have not yet been met. The associated solar power project related costs are included as current deferred project costs or prepaid expenses and other current assets.

Other liabilities

Other liabilities consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012	December 31, 2011
Product warranty liability	$ 101,015	$ 79,105
Other taxes payable	102,599	73,054
Billings in excess of costs and estimated earnings	47,623	—

Other liabilities - noncurrent	40,979	53,973
Other liabilities	$ 292,216	$ 206,132

Note 10. Derivative Financial Instruments

As a global company, we are exposed in the normal course of business to interest rate and foreign currency risks that could affect our consolidated net assets, financial position, results of operations, and cash flows. We use derivative instruments to hedge

against certain risks such as these, and we only hold derivative instruments for hedging purposes, not for speculative or trading purposes. Our use of derivative instruments is subject to internal controls based on centrally defined, performed, and controlled policies and procedures.

Depending on the terms of the specific derivative instruments and market conditions, some of our derivative instruments may be assets and others liabilities at any particular consolidated balance sheet date. As required by ASC 815, Derivatives and Hedging, we report all of our derivative instruments that are within the scope of that accounting standard at fair value. We account for changes in the fair value of derivative instruments within accumulated other comprehensive income (loss) if the derivative instruments qualify for hedge accounting under ASC 815. For those derivative instruments that do not qualify for hedge accounting ("economic hedges"), we record the changes in fair value directly to earnings. These accounting approaches, the various risks that we are exposed to in our business and our use of derivative instruments to manage these risks are described below. See Note 2. "Summary of Significant Accounting Policies," to our consolidated financial statements for information about the techniques we use to measure the fair value of our derivative instruments.

The following tables present the fair values of derivative instruments included in our consolidated balance sheets as of December 31, 2012 and December 31, 2011 (in thousands):

	December 31, 2012		
	Prepaid Expenses and Other Current Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments under ASC 815:			
Foreign exchange forward contracts	$2,121	$—	$—
Cross-currency swap contract	—	316	1,582
Interest rate swap contract	—	473	994
Total derivatives designated as hedging instruments	$2,121	$789	$2,576
Derivatives not designated as hedging instruments under ASC 815:			
Foreign exchange forward contracts	$5,109	$5,036	$—
Total derivatives not designated as hedging instruments	$5,109	$5,036	$—
Total derivative instruments	$7,230	$5,825	$2,576

	December 31, 2011		
	Prepaid Expenses and Other Current Assets	Other Current Liabilities	Other Liabilities
Derivatives designated as hedging instruments under ASC 815:			
Foreign exchange forward contracts	$28,415	$—	$—
Cross-currency swap contract	$—	$—	$4,943
Interest rate swap contracts	—	444	2,127
Total derivatives designated as hedging instruments	$28,415	$444	$7,070
Derivatives not designated as hedging instruments under ASC 815:			
Foreign exchange forward contracts	$35,258	$36,898	$—
Total derivatives not designated as hedging instruments	$35,258	$36,898	$—

Total derivative instruments	$63,673	$37,342	$7,070

The following table presents the effective amounts related to derivative instruments designated as cash flow hedges under ASC 815 affecting accumulated other comprehensive income (loss) and our consolidated statements of operations for the years ended December 31, 2012, December 31, 2011 , and December 31, 2010 (in thousands):

	Foreign Exchange Forward Contracts	Interest Rate Swap Contracts	Cross Currency Swap Contract	Total
Balance at December 26, 2009	$(15,942)	$(1,083)	$—	$(17,025)
Amounts recognized in other comprehensive income (loss)	28,807	(1,507)	—	27,300
Amounts reclassified to earnings impacting:				
Net sales	(14,313)	—	—	(14,313)
Interest expense	—	1,371	—	1,371
Balance at December 31, 2010	$(1,448)	$(1,219)	$—	$(2,667)
Amounts recognized in other comprehensive income (loss)	(12,086)	(2,112)	(5,042)	(19,240)
Amounts reclassified to net sales as a result of forecasted transactions being probable of not occurring	(3,954)	—	—	(3,954)
Amounts reclassified to earnings impacting:				
Net sales	51,239	—	—	51,239
Foreign currency (loss) gain	—	—	(957)	(957)
Interest expense	—	760	100	860
Balance at December 31, 2011	$33,751	$(2,571)	$(5,899)	$25,281
Amounts recognized in other comprehensive income (loss)	$(11,040)	$(1,650)	$2,680	$(10,010)
Amounts reclassified to net sales as a result of forecasted transactions being probable of not occurring	$(4,372)	$—	$—	$(4,372)
Amounts reclassified to earnings impacting:				
Net sales	(9,359)	—	—	(9,359)
Foreign currency (loss) gain	—	—	(5,176)	(5,176)
Interest expense	—	2,754	364	3,118
Balance at December 31, 2012	$8,980	$(1,467)	$(8,031)	$(518)

We recorded immaterial amounts of unrealized losses related to ineffective portions of our derivative instruments designated as cash flow hedges during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 directly to other income, net. In addition, we recognized unrealized gains of $2.0 million and unrealized losses of $2.7 million related to amounts excluded from effectiveness testing for our foreign exchange forward contracts designated as cash flow hedges within other income, net during the years ended December 31, 2012, and December 31, 2011, respectively. We did not have any amounts excluded from effectiveness testing for our foreign exchange forward contracts designated as cash flow hedges for the year ended December 31, 2010.

The following table presents the amounts related to derivative instruments not designated as cash flow hedges under ASC 815 affecting our consolidated statements of operations for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

		Amount of Gain (Loss) Recognized in Income on Derivatives		
Derivatives not designated as hedging instruments under ASC 815:	Location of Gain (Loss) Recognized in Income on Derivatives	Year Ended December 31, 2012	Year Ended December 31, 2011	Year Ended December 31, 2010
Foreign exchange forward contracts	Foreign currency (loss) gain	$ 3,185	$ (1,796)	$ (579)
Foreign exchange forward contracts	Cost of sales	$ (1,284)	$ (1,844)	$ (3,946)
Foreign exchange forward contracts	Net Sales	$ —	$ —	$ 11,743

Interest Rate Risk

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

On November 16, 2011, we entered into an interest rate swap contract to hedge a portion of the floating rate loans under our

German Facility Agreement, which became effective on November 18, 2011 with an initial notional value of €50.0 million and pursuant to which we are entitled to receive a three-month floating interest rate, the Euro Interbank Offered Rate ("EURIBOR"), and are required to pay a fixed rate of 1.985%. As of December 31, 2011 the notional value of this interest rate swap was €50.0 million. This derivative instrument qualified for accounting as a cash flow hedge in accordance with ASC 815 and we designated it as such. We determined that our interest rate swap contract was highly effective as a cash flow hedge at December 31, 2011. As of March 31, 2012, we discontinued hedge accounting for this interest rate swap contract as the forecasted interest payments were no longer probable of occurring as originally scheduled. On April 17, 2012, we terminated this swap and realized a loss of $1.9 million as the forecasted interest payments were probable of not occurring, which amount was included within interest expense.

On September 30, 2011, we entered into a cross-currency swap contract to hedge the floating rate foreign currency denominated loan under our Malaysian Ringgit Facility Agreement. This swap had an initial notional value of MYR 465.0 million and entitles us to receive a three-month floating Kuala Lumpur Interbank Offered Rate ("KLIBOR") interest rate, and requires us to pay a U.S. dollar fixed rate of 3.495%. Additionally, this swap hedges the foreign currency risk of the Malaysian Ringgit denominated principal and interest payments as we make swap payments in U.S. dollars and receive swap payments in Malaysian Ringgits at a fixed exchange rate of 3.19 MYR to USD. The notional amount of the swap is scheduled to decline in correspondence to our scheduled principal payments on the underlying hedged debt. As of December 31, 2012 and December 31, 2011, the notional value of this cross-currency swap contract was MYR 465.0 million. This swap is a derivative instrument that qualifies for accounting as a cash flow hedge in accordance with ASC 815 and we designated it as such. We determined that this swap was highly effective as a cash flow hedge at December 31, 2012 and December 31, 2011. For the year ended December 31, 2012 and December 31, 2011, there were immaterial amounts of ineffectiveness from this cash flow hedge.

On May 29, 2009, we entered into an interest rate swap contract to hedge a portion of the floating rate loans under our Malaysian Facility Agreement, which became effective on September 30, 2009 with an initial notional value of €57.3 million and pursuant to which we are entitled to receive a six-month floating EURIBOR interest rate, and are required to pay a fixed rate of 2.80%. The notional amount of the interest rate swap contract is scheduled to decline in correspondence to our scheduled principal payments on the underlying hedged debt. As of December 31, 2012 and December 31, 2011, the notional value of this interest rate swap contract was €29.1 million and €38.5 million, respectively. This derivative instrument qualifies for accounting as a cash flow hedge in accordance with ASC 815 and we designated it as such. We determined that our interest rate swap contract was highly effective as a cash flow hedge at December 31, 2012 and December 31, 2011. For the year ended December 31, 2012, December 31, 2011, and December 31, 2010, there were immaterial amounts of ineffectiveness from this cash flow hedge.

In the following 12 months, we expect to reclassify to earnings $0.8 million of net unrealized losses related to the interest rate swap contract and cross-currency swap contract that are included in accumulated other comprehensive income (loss) at December 31, 2012 as we realize the earnings effect of the underlying loans. The amount we ultimately record to earnings will depend on the actual interest and foreign exchange rates when we realize the earnings effect of the underlying loans.

Foreign Currency Exchange Risk

Cash Flow Exposure

We expect many of the components of our business to have material future cash flows, including revenues and expenses that will be denominated in currencies other than a subsidiaries' functional currency. Our primary cash flow exposures are net sales and expenses. Changes in the exchange rates between our subsidiaries' functional currencies and the other currencies in which they transact will cause fluctuations in the cash flows we expect to receive or pay when these cash flows are realized or settled. Accordingly, we enter into foreign exchange forward contracts to hedge

a portion of these forecasted cash flows. As of December 31, 2012 and December 31, 2011, these foreign exchange contracts hedged our forecasted cash flows for up to 6 months and 12 months, respectively. These foreign exchange contracts qualify for accounting as cash flow hedges in accordance with ASC 815, and we designated them as such. We initially report the effective portion of the derivative instrument's gain or loss in accumulated other comprehensive income (loss) and subsequently reclassify amounts into earnings when the hedged transaction occurs and impacts earnings. We determined that these derivative financial instruments were highly effective as cash flow hedges at December 31, 2012 and December 31, 2011. In addition, during the year ended December 31, 2012, December 31, 2011, and December 31, 2010, we did not discontinue any cash flow hedges because a hedging relationship was no longer highly effective.

During the year ended December 31, 2012, we did not purchase any foreign exchange forward contracts that qualify as new cash flow hedges. However, certain foreign exchange forward contracts purchased in prior periods to hedge the exchange rate risk on forecasted cash flows denominated in Canadian dollar remained outstanding. As of December 31, 2012 and December 31, 2011, the notional values associated with our foreign exchange forward contracts were as follows (notional amounts and U.S. dollar equivalents in millions):

December 31, 2012

Currency	Notional Amount	USD Equivalent
Canadian dollar	CAD 192.0	$195.1

December 31, 2011

Currency	Notional Amount	USD Equivalent
Euro	€81.0	$105.3
Canadian Dollar	CAD 340.0	$333.2
Australian Dollar	AUD 8.0	$8.2

As of December 31, 2012, the unrealized gain on these contracts was $9.0 million. As of December 31, 2011, the unrealized gain on these contracts was $33.8 million including the impact of $2.6 million in unrealized gains from our discontinued foreign exchange forward contract hedges.

In the following 12 months, we expect to reclassify to earnings $9.0 million of net unrealized gains related to these forward contracts that are included in accumulated other comprehensive income (loss) at December 31, 2012 as we realize the earnings effect of the related forecasted transactions. The amount we ultimately record to earnings will depend on the actual exchange rate when we realize the related forecasted transactions.

Transaction Exposure and Economic Hedging

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

During the year ended December 31, 2012, we purchased foreign exchange forward contracts to economically hedge balance sheet and other exposures related to transactions with third parties. Such contracts are considered economic hedges and do not qualify for hedge accounting under ASC 815. We recognize gains or losses from the fluctuation in foreign exchange rates and the fair value of these derivative contracts in "Net Sales", "Cost of sales", and "Foreign currency gain (loss)" on our consolidated statements of operations, depending on where the gain or loss from the economically hedged item is classified on our consolidated statements of operations. As of December 31, 2012, the total unrealized gain on our economic hedge foreign exchange forward contracts was $0.1 million. These contracts have maturities of less than three months. As of December 31, 2011 the total unrealized loss on our economic hedge foreign exchange forward contracts $8.2 million.

As of December 31, 2012 and December 31, 2011, the notional values of our foreign exchange forward contracts that do not qualify for hedge accounting under ASC 815 were as follows (notional amounts and U.S. dollar equivalents in millions):

December 31, 2012

Transaction	Currency	Notional Amount	USD Equivalent

Purchase	Euro	€128.7	$170.2
Sell	Euro	€134.2	$177.5
Sell	Australian dollar	AUD 8.5	$8.8
Purchase	Malaysian ringgit	MYR 136.4	$45.0
Sell	Malaysian ringgit	MYR 36.0	$11.9
Purchase	Canadian dollar	CAD 22.4	$22.6
Sell	Canadian dollar	CAD 15.8	$16.0

December 31, 2011			
Transaction	Currency	Notional Amount	USD Equivalent
Purchase	Euro	€676.2	$879.1
Sell	Euro	€484.9	$630.4
Purchase	Australian dollar	AUD 2.9	$3.0
Sell	Australian dollar	AUD 8.2	$8.4
Purchase	Malaysian ringgit	MYR 159.7	$51.1
Sell	Malaysian ringgit	MYR 23.9	$7.6
Purchase	Japanese yen	JPY 248.0	$2.5
Purchase	Canadian dollar	CAD 16.5	$16.2
Sell	Canadian dollar	CAD 14.7	$14.4

The tables above includes certain foreign exchange forward contracts originally designated as cash flow hedges but that were subsequently dedesignated.

Note 11. Fair Value Measurement

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

- Cash equivalents. At December 31, 2012, our cash equivalents consisted of commercial paper and money market mutual funds. At December 31, 2011, our cash equivalents consisted of money market mutual funds. We value our commercial paper cash equivalents using quoted prices for securities with similar characteristics and other observable inputs (such as interest rates that are observable at commonly quoted intervals). Accordingly, we classify the valuation techniques that use these inputs as Level 2. We value our money market cash equivalents using observable inputs that reflect quoted prices for securities with identical characteristics, and accordingly, we classify the valuation techniques that use these inputs as Level 1.

- Marketable securities and restricted investments. At December 31, 2012, our marketable securities consisted of commercial paper, corporate debt securities, federal and foreign agency debt, foreign government obligations, supranational debt, and U.S. government obligations and our restricted investments consisted of foreign and U.S. government obligations. At December 31, 2011, our marketable securities consisted of commercial paper, corporate debt securities, federal and foreign agency debt, foreign government obligations, supranational debt, and U.S. government obligations, and our restricted investments consisted of foreign and U.S. government obligations. We value our marketable securities and restricted investments using quoted prices for securities with similar characteristics and other observable inputs (such as interest rates that are observable at commonly quoted intervals), and accordingly, we classify the valuation techniques that use these inputs as Level 2. We also consider the effect of our counterparties' credit standings in these fair value measurements.

- Derivative assets and liabilities. At December 31, 2012 and December 31, 2011, our derivative assets and liabilities consisted of foreign exchange forward contracts involving major currencies, interest rate swap contracts involving a benchmark of interest rates, and a cross-currency swap including both. Since our derivative assets and liabilities are not traded on an exchange, we value them using industry standard valuation models. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, credit risk, foreign exchange rates, and forward and spot prices for currencies. These inputs are observable in active markets over the contract term of the derivative instruments we hold, and accordingly, we classify these valuation techniques as Level 2. We consider the effect of our own credit standing and that of our counterparties in our fair value measurements of our derivative assets and liabilities.

At December 31, 2012 and December 31, 2011, information about inputs into the fair value measurements of our assets and liabilities that we make on a recurring basis was as follows (in thousands):

	As of December 31, 2012			
		Fair Value Measurements at Reporting Date Using		
	Total Fair Value and Carrying Value on Our Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Commercial paper	$1,500	$—	$1,500	$—
Money market mutual funds	10,729	10,729	—	—
Marketable securities:				
Commercial paper	1,698	—	1,698	—
Corporate debt securities	23,384	—	23,384	—
Federal agency debt	29,936	—	29,936	—
Foreign agency debt	7,233	—	7,233	—
Foreign government obligations	4,142	—	4,142	—
Supranational debt	34,181	—	34,181	—
U.S. government obligations	2,004	—	2,004	—
Restricted investments (excluding restricted cash)	301,216	—	301,216	—
Derivative assets	7,230	—	7,230	—
Total assets	$423,253	$10,729	$412,524	$—
Liabilities:				
Derivative liabilities	$8,401	$—	$8,401	$—

	As of December 31, 2011			
		Fair Value Measurements at Reporting Date Using		
	Total Fair Value and Carrying Value on Our Balance Sheet	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents:				
Money market mutual funds	$26,378	$26,378	$—	$—
Marketable securities:				
Commercial paper	9,193	—	9,193	—
Corporate debt securities	55,011	—	55,011	—
Federal agency debt	50,081	—	50,081	—
Foreign agency debt	10,928	—	10,928	—
Foreign government obligations	9,120	—	9,120	—
Supranational debt	45,991	—	45,991	—
US government obligations	2,014	—	2,014	—

Restricted investments (excluding restricted cash)	178,815	—	178,815	—
Derivative assets	63,673	—	63,673	—
Total assets	$451,204	$26,378	$424,826	$—
Liabilities:				
Derivative liabilities	$44,412	$—	$44,412	$—

Fair Value of Financial Instruments

The carrying values and fair values of our financial instruments at December 31, 2012 and December 31, 2011 were as follows

(in thousands):

	December 31, 2012		December 31, 2011	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets:				
Marketable securities - current and noncurrent	$102,578	$102,578	$182,338	$182,338
Foreign exchange forward contract assets	$7,230	$7,230	$63,673	$63,673
Restricted investments (excluding restricted cash)	$301,216	$301,216	$178,815	$178,815
Notes receivable - affiliate	$17,725	$17,723	$—	$—
Notes receivable - noncurrent	$9,260	$9,371	$9,086	$9,288
Liabilities:				
Long-term debt, including current maturities	$562,572	$565,879	$663,648	$670,662
Interest rate swap contract liabilities	$1,467	$1,467	$2,571	$2,571
Cross currency swap contract liabilities	$1,898	$1,898	$4,943	$4,943
Foreign exchange forward contract liabilities	$5,036	$5,036	$36,868	$36,868

The carrying values on our condensed consolidated balance sheet of our cash and cash equivalents, trade accounts receivable, unbilled accounts receivable, other assets, restricted cash, accounts payable, income taxes payable, and accrued expenses approximate their fair values due to their short maturities; therefore, we exclude them from the foregoing table.

We estimated the fair value of our long-term debt in accordance with ASC 820 using a discounted cash flows approach (an income approach). We incorporated the credit risk of our counterparty for all asset fair value measurements and our credit risk for all liability fair value measurements. Such fair value measurements are considered Level 2 under the fair value hierarchy.

Credit Risk

We have certain financial and derivative instruments that subject us to counter party credit risk. These consist primarily of cash, cash equivalents, marketable securities, restricted investments, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash equivalents, marketable securities, restricted investments, interest rate swap and cross-currency swap contracts, and foreign exchange forward contracts with various high-quality financial institutions and limit the amount of credit risk from any one counterparty. We continuously evaluate the credit standing of our counterparty financial institutions.

Note 12. Economic Development Funding

On February 11, 2011 we were approved to receive taxable investment incentives (“Investitionszuschüsse”) of approximately €6.3 million from the State of Brandenburg, Germany. These funds were expected to reimburse us for certain costs incurred related to the expansion of our manufacturing plant in Frankfurt (Oder), Germany, including costs for the construction of buildings and the purchase of machinery and equipment. Receipt of these incentives was conditional upon the State of Brandenburg having sufficient funds allocated to this program to pay the reimbursements we claimed. Based on several factors, including the fiscal budget and credit rating of the State of Brandenburg among others, we believed that there was reasonable assurance that we would receive these grants. In addition, we were required to operate our facility for a minimum of five years and employ a specified number of associates during this period. We expected to meet these conditions at the time such incentives were recorded and as of December 31, 2011, based on our prior operating plans and commitments. As of December 31, 2011, we had received cash payments of €5.3 million under the program.

We were also eligible to recover up to approximately €17.2 million related to the construction of our plant expansion in Frankfurt (Oder), Germany under the German Investment Grant Act of 2010 (“Investitionszulagen”). This Act permitted us to claim tax-exempt reimbursements for certain costs that we incurred related to the expansion of our manufacturing plant in Frankfurt (Oder), Germany, including costs for the construction of buildings and the purchase of machinery and equipment. Tangible long-lived assets subsidized under this program had to remain in the region for at least five years. We expected to meet these conditions at the time such incentives were recorded and as of December 31, 2011, based on our operating plans and commitments. As of December 31, 2011, we had received cash payments of €6.0 million under this program.

We accounted for these grants as a reduction to the carrying value of the property, plant and equipment they fund when there

was reasonable assurance that we complied and were expected to continue to comply with the conditions attached to the grants and the grants would be received.

Due to the closure of our manufacturing plants in Frankfurt (Oder), Germany, we no longer had reasonable assurance we would meet the required conditions to earn such incentives. As a result, in the three months ended March 31, 2012, we recorded an expense of $29.8 million primarily associated with the expected repayment of amounts received and the write-off of outstanding amounts accrued for as receivables under such incentive programs. As of December 31, 2012, we had repaid the entire €5.3 million received under the Investitionszuschüsse program and we have recorded €6.0 million within other current liabilities representing the required repayment of the Investitionszulagen program. See Note 4. “Restructuring,” for additional information on the closure of our manufacturing plants in Frankfurt (Oder), Germany.

Note 13. Related Party Transactions

In October 2008, we made an investment, at a total cost of $25.0 million, in the preferred stock of a company based in the United States that supplies and installs solar power systems for commercial and residential customers. In the fourth fiscal quarter of 2008, we also entered into a long-term solar module supply agreement with this related party. This investment represented an ownership of approximately 11% of the voting interest in this company as of September 25, 2010 (the end of our third fiscal quarter) and was our only equity interest in that entity. Since our ownership interest in this company was less than 20%, we did not have significant influence over it, and the fair value was not readily determinable, we accounted for this investment using the cost method. In December 2010, we sold our investment for $28.6 million in cash and terminated our long-term solar module supply agreement with this related party.

During the year ended December 31, 2010, we recognized $9.6 million in net sales to this related party. At December 31, 2012 and December 31, 2011, we did not have any accounts receivable from this related party.

In connection with the closure of our manufacturing plant in Frankfurt (Oder) we sold $0.5 million of solar modules to employees in 2012, which were paid for in cash at the time of the sale.

Note 14. Notes Receivable, Affiliate

In January 2012, we contributed an immaterial amount for a 50% ownership interest in a newly formed limited liability company (“property company”), which was formed for the sole purpose of holding land for use in the development of a certain solar power project. One of our customers also contributed an immaterial amount for the remaining 50% ownership interest in the property company. The activities for the property company are governed by a shareholders agreement. The intent of the shareholders agreement is to outline the parameters of the arrangement with our customer, whereby we would supply solar modules to our customer for the solar power project and our customer would develop, construct, and sell the project. The shareholders agreement also requires each party to consent to all decisions made for the most significant activities of the property company. There are no requirements for us to make further contributions to the property company and the proceeds from the sale of the project are to be divided equally between us and our customer after the repayment of all project development related costs including the repayment of the loan discussed further below.

We also entered into a loan agreement with the property company, which is considered an affiliate, to loan up to €17.0 million, the proceeds of which must be used to purchase the project land and to pay for certain land development costs. The loan bears interest at 6% per annum and must be repaid only after the underlying solar power project has been sold and sufficient proceeds from the sale are received. As of December 31, 2012, the outstanding balance on this loan was €13.4 million. Construction of the project was substantially completed during September 2012 and €3.5

million of the loan was repaid as definitive sales agreements were executed for the sale of the project. A portion of the initial sale proceeds, received at the time definitive sales agreements were executed, were used to repay a portion of the loan. Payment of the remaining sales proceeds are subject to certain conditions precedent, which are expected to be met in the first half of 2013, at which time the outstanding balance under the loan including interest will be repaid.

The property company is considered a variable interest entity and our ownership interest in and the loan to the property company are considered variable interests. We accounted for our immaterial equity investment in the property company under the equity method of accounting as we concluded we are not the primary beneficiary as we do not have the power to make decisions for the most significant activities of the property company. No interest income will be recorded under the loan agreement until such interest income is realized due to the loan being with an affiliate and as payment is not due until sufficient sales proceeds have been received from the sale of the project. There was no income or losses generated by the property company during the year ended December 31, 2012 as substantially all costs incurred by the property company were capital in nature.

Note 15. Solar Module Collection and Recycling Liability

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

At the time of sale, we record our collection and recycling obligation based on the estimated present value of the cost to collect and recycle covered solar modules within cost of sales. We estimate the cost of our collection and recycling obligations based on the present value of the expected probability weighted future cost of collecting and recycling the solar modules, which includes estimates for the cost of packaging the solar modules for transport, the cost of freight from the solar module installation sites to a recycling center, the material, labor, capital costs, and scale of recycling centers, and an estimated third-party profit margin and return on risk for collection and recycling services. We base this estimate on our experience collecting and recycling our solar modules and on our expectations about future developments in recycling technologies and processes, about economic conditions at the time the solar modules will be collected and recycled, and about the expected timing of when our solar modules will be returned for recycling. In the periods between the time of our sales and the settlement of our collection and recycling obligations, we accrete the carrying amount of the associated liability by applying the discount rate used for its initial measurement. We classify accretion as an operating expense within selling, general and administrative expense on our consolidated statement of operations. We periodically review our estimates of the expected future recycling costs and may adjust our liability accordingly. During the fourth quarter of 2012 we completed an annual cost study and updated our estimates for the expected future recycling costs. As a result, we adjusted our module collection and recycling liability accordingly.

Our module collection and recycling liabilities totaled $212.8 million at December 31, 2012 and $167.4 million at December 31, 2011. We charged $24.3 million, $38.3 million, and $45.0 million to cost of sales for the estimated cost of our collection and recycling obligation for modules sold during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively. The accretion expense on our collection and recycling obligations was $2.4 million, $4.5 million, and $1.6 million during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

See also Note 8. "Restricted Cash and Investments," to our consolidated financial statements for more information about our arrangements for funding of this liability.

Note 16. Debt

Our long-term debt consisted of the following at December 31, 2012 and December 31, 2011 (in thousands):

Type	December 31, 2012	December 31, 2011
Revolving Credit Facility	$ 270,000	$ 200,000
German Facility Agreement	—	140,085
Malaysian Ringgit Facility Agreement	151,901	146,725
Malaysian Euro Facility Agreement	58,255	67,556
Malaysian Facility Agreement	78,657	102,008
Director of Development of the State of Ohio	4,527	6,337
France Facility Agreement	—	4,833
Capital lease obligations	1,955	2,440
	565,295	669,984

Less unamortized discount	(2,723)	(6,336)
Total long-term debt	562,572	663,648
Less current portion of long-term debt	(62,349)	(44,505)
Noncurrent portion	$ 500,223	$ 619,143

We did not have any short-term debt at December 31, 2012 and December 31, 2011.

Revolving Credit Facility

On September 4, 2009, we entered into a credit agreement ("Revolving Credit Facility") with several financial institutions as lenders. JPMorgan Securities LLC and Banc of America Securities LLC served as joint-lead arrangers and bookrunners, with JPMorgan Chase Bank, N.A. also acting as administrative agent. The Revolving Credit Facility provided FSI and FSM GmbH, a borrowing subsidiary under the credit facility, with a senior secured three-year revolving credit facility in an aggregate available amount of $300.0 million, a portion of which was available for letters of credit.

On October 15, 2010, we entered into an amended and restated Revolving Credit Facility which provides FSI and FSM GmbH with a senior secured five-year revolving credit facility in an aggregate available amount of $600.0 million, all of which is available for letters of credit. Subject to certain conditions, we have the right to request an increase in the aggregate commitments under the credit facility up to $750.0 million. Proceeds from the credit facility may be used for working capital and other general corporate purposes.

The Revolving Credit Facility consisted of the following at December 31, 2012 (in thousands):

Maturity	Denomination	Amended Capacity	Borrowings Outstanding December 31, 2012	Letters of Credit Outstanding December 31, 2012	Availability December 31, 2012
2015	USD	$600,000	$270,000	$130,922	$199,078

Borrowings under the Revolving Credit Facility bear interest at (i) the London Interbank Offering Rate (LIBOR) (adjusted for Eurocurrency reserve requirements) plus a margin of 2.25% or (ii) a base rate as defined in the credit agreement plus a margin of 1.25%, depending on the type of borrowing requested by us. These margins are subject to adjustments depending on our consolidated leverage ratio. As of December 31, 2012, based on the outstanding borrowings, the all-in borrowing rate was 4.14%. Borrowings outstanding as of December 31, 2012 were drawn at either the 1 month LIBOR rate or prime rate.

The Revolving Credit Facility contains the following financial covenants: a leverage ratio covenant, a minimum EBITDA covenant, and a minimum liquidity covenant. We are also subject to customary non-financial covenants. We were in compliance with these covenants through December 31, 2012.

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

In connection with our Revolving Credit Facility, we entered into a guarantee and collateral agreement and various foreign security agreements. Loans made to FSM GmbH were (i) guaranteed by FSI pursuant to the guarantee and collateral agreement, (ii) guaranteed by certain of FSI's direct and indirect subsidiaries organized under the laws of Germany, pursuant to a German guarantee agreement, (iii) secured by share pledge agreements, (iv) secured by a security interest in inter-company receivables held by First Solar Holdings GmbH, First Solar GmbH, and FSM GmbH, pursuant to assignment agreements, and (v) subject to a security trust agreement, which sets forth additional terms regarding the foregoing German security documents and arrangements.

On May 6, 2011, we entered into the first amendment to the amended and restated Revolving Credit Facility which provided for, among other things, the termination of FSM GmbH as a borrowing subsidiary under the credit agreement and the release of the guarantees of, and the liens securing, its obligations thereunder. The amendment also effected certain changes to the restrictions set forth in the credit agreement with respect to the incurrence of

indebtedness to finance the construction or acquisition of new manufacturing facilities and assets relating thereto. In addition, the amendment effected certain technical and clarifying amendments.

On June 30, 2011, we entered into the second amendment and waiver to the amended and restated Revolving Credit Facility. The amendment became effective as of June 30, 2011 upon receipt of approval thereof from the required lenders on July 11, 2011. The amendment provided for, among other things, the ability of restricted subsidiaries to incur indebtedness and guarantee obligations pursuant to letters of credit, bank guarantees, or similar instruments issued in the ordinary course of business; provided that the aggregate stated or face amount of all such letters of credit, bank guarantees, and similar instruments shall not exceed $50.0 million for all restricted subsidiaries outstanding at any time.

On October 23, 2012, we entered into the third amendment to the amended and restated Revolving Credit Facility. This amendment provided for, among other things, our ability to obtain letters of credit denominated in currencies other than US Dollars, Euros, Canadian Dollars, and British Pound Sterling with the consent of the applicable issuing lender (as defined in the credit

agreement); provided that the dollar equivalent of the aggregate amount of the obligation attributable to letters of credit denominated in such alternative currencies shall not exceed $300.0 million at any time.

German Facility Agreement

On May 18, 2011, in connection with the plant expansion at our German manufacturing center, FSM GmbH, our indirect wholly owned subsidiary, entered into the German Facility Agreement with Commerzbank Aktiengesellschaft as arranger and Commerzbank Aktiengesellschaft, Luxembourg Branch as facility agent and security agent.

In April 2012, we voluntarily repaid the entire outstanding balance under the German Facility Agreement of $141.8 million and we incurred $4.7 million of costs associated with the repayment.

Malaysian Ringgit Facility Agreement

On June 30, 2011, in connection with the plant expansion at our Malaysian manufacturing center, FS Malaysia, our indirect wholly owned subsidiary, entered into a credit facility agreement ("Malaysian Ringgit Facility Agreement"), among FSI as guarantor, CIMB Investment Bank Berhad, Maybank Investment Bank Berhad, and RHB Investment Bank Berhad as arrangers with CIMB Investment Bank Berhad also acting as facility agent and security agent, and the original lenders party thereto.

The Malaysian Ringgit Facility Agreement consisted of the following at December 31, 2012 (in thousands):

Interest Rate	Maturity	Denomination	Original Capacity	Borrowings Outstanding December 31, 2012	Availability December 31, 2012
KLIBOR plus 2.00% (1)	2018	MYR	RM465,000	RM465,000	RM—

(1) We entered into a cross-currency swap contract related to this loan. See Note 10. "Derivative Financial Instruments," to our consolidated financial statements.

The proceeds of the Malaysian Ringgit Facility Agreement were used by FS Malaysia to finance, in part, the design, construction, and commission of our fifth and sixth manufacturing plants ("Plants 5 and 6") in Kulim, Malaysia and the acquisition of certain plant, equipment and machinery installed in each plant.

FS Malaysia may voluntarily prepay outstanding loans under the Malaysian Ringgit Facility Agreement at any time without premium or penalty, subject to compensation for customary "break costs" and certain other requirements. FS Malaysia is required to prepay loans with certain insurance proceeds, and the loans are subject to mandatory prepayment upon the occurrence of a change of control, material asset disposal, or termination of the construction of Plants 5 and 6.

The loans made to FS Malaysia are secured by, among other things FS Malaysia's leases over the leased lots on which Plants 5 and 6 are located and all plant, equipment and machinery purchased by FS Malaysia with the proceeds of the facility or otherwise installed in or utilized in Plants 5 and 6, to the extent not financed, or subject to a negative pledge under a separate financing facility relating to Plants 5 and 6. In addition, FS Malaysia's obligations under the agreement are guaranteed, on an unsecured basis, by FSI.

On November 8, 2011, we entered into an amendment to the Malaysian Ringgit Facility Agreement which became effective as of September 30, 2011. The amendment replaces and clarifies certain terms and definitions related to the financial covenants included in the agreement.

At December 31, 2012, buildings, equipment, and land leases with net book values of $239.4 million were pledged as collateral for this loan.

The Malaysian Ringgit Facility Agreement contains negative covenants that, among other things, restrict, subject to certain exceptions, the ability of FS Malaysia to incur indebtedness, create liens, effect asset sales, engage in reorganizations, issue guarantees, and make loans. In addition, the agreement includes financial covenants relating to net total leverage ratio, interest coverage ratio, total debt to equity ratio, debt service coverage ratio, and tangible net worth. It also contains certain representations and warranties, affirmative covenants, and events of default provisions. We were in compliance with all covenants through December 31, 2012.

Malaysian Euro Facility Agreement

On August 3, 2011, in connection with the plant expansion at our Malaysian manufacturing center, FS Malaysia, our indirect wholly owned subsidiary, entered into a credit facility agreement ("Malaysian Euro Facility Agreement") with Commerzbank Aktiengesellschaft and Natixis Zweigniederlassung Deutschland as arrangers and original lenders, and Commerzbank Aktiengesellschaft, Luxembourg Branch as facility agent and security agent.

The Malaysian Euro Facility Agreement consisted of the following at December 31, 2012 (in thousands):

Interest Rate	Maturity	Denomination	Original Capacity		Borrowings Outstanding December 31, 2012	Availability December 31, 2012
EURIBOR plus 1.00%	2018	EUR	€60,000	(1)	€44,039	€—

(1) Three euro-denominated term loan facilities were origionally available to FS Malaysia in the following maximum aggregate amounts: €27.1 million, €32.0 million, and €0.9 million.

In connection with the Malaysian Euro Facility Agreement, FSI concurrently entered into a first demand guarantee agreement dated August 3, 2011 in favor of the lenders. Under this agreement, FS Malaysia's obligations related to the credit facility are guaranteed, on an unsecured basis, by FSI. At the same time, FS Malaysia and FSI also entered into a subordination agreement, pursuant to which any payment claims of FSI against FS Malaysia are subordinated to the claims of the lenders. The proceeds of the facilities were used by FS Malaysia to finance, in part, the supply and construction of machinery and equipment installed in Plants 5 and 6 in Kulim, Malaysia and the payment of fees to Euler-Hermes Kreditversicherungs-AG, the German Export Credit Agency of Hamburg, Federal Republic of Germany ("Euler Hermes"), which guarantees 95% of FS Malaysia's obligations related to these credit facilities.

On September 16, 2011, we entered into the first amendment to the Malaysian Euro Facility Agreement. The purpose of the amendment was primarily to clarify funding amounts and conditions including an updated description of the available facilities under the agreement.

FS Malaysia paid the facility agent in the form of a one-time upfront payment for the account of Commerzbank Aktiengesellschaft, as arranger, an arrangement fee of 0.35% and for the account of the lenders a participation fee of 0.65%, in each case of the aggregate amount of the facilities as of the date of the credit agreement.

During the period from the date of the credit agreement until November 25, 2011, unutilized commitments were subject to a commitment fee equal to 0.35% per annum. Pursuant to the agreement, we began making semi-annual repayments of the principal balance during 2011. Amounts repaid under this credit facility cannot be re-borrowed and shall be repaid in 14 semi-annual equal consecutive installments. At any time after the first repayment date, FS Malaysia may voluntarily prepay loans outstanding under the facilities on the last day of the interest period applicable thereto (subject to certain requirements, including with respect to minimum prepayment amounts). If the Euler Hermes Guarantee ceases to be in full force and effect or is repudiated, the facility agent at the direction of the lenders will cancel the available commitments under the facilities and declare the outstanding loans due and payable.

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

and events of default provisions. We were in compliance with all covenants through December 31, 2012.

Malaysian Facility Agreement

On May 6, 2008, in connection with the plant expansion at our Malaysian manufacturing center, FS Malaysia, our indirect wholly owned subsidiary, entered into an export financing facility agreement ("Malaysian Facility Agreement") with a consortium of banks.

The Malaysian Facility Agreement consisted of the following facilities at December 31, 2012 (in thousands):

Borrowing	Interest Rate	Maturity	Denomination	Original Capacity	Borrowings Outstanding December 31, 2012	Availability December 31, 2012
Fixed-rate facility	4.54%	2016	EUR	€67,000	€29,731	€—
Floating-rate facility	EURIBOR plus 0.55% (1)	2016	EUR	€67,000	€29,731	€—
				€134,000	€59,462	€—

(1) We entered into an interest rate swap contract related to this loan. See Note 10. “Derivative Financial Instruments,” to our consolidated financial statements.

The proceeds of the Malaysian Facility Agreement were used by FS Malaysia for the purpose of (i) partially financing the purchase of certain equipment used at our Malaysian manufacturing center, and (ii) financing fees paid to Euler-Hermes Kreditversicherungs-AG, the German Export Credit Agency of Hamburg, Federal Republic of Germany, which guarantees 95% of FS Malaysia’s obligations related to these credit facilities. In addition to paying interest on outstanding principal under the facilities, FS Malaysia is obligated to pay annual agency fees and security agency fees. Pursuant to the agreement, we began semi-annual repayments of the principal balances of these credit facilities during 2008. Amounts repaid under these credit facilities cannot be re-borrowed.

In connection with the Malaysian Facility Agreement, FSI concurrently entered into a first demand guarantee agreement dated May 6, 2008 in favor of the lenders. Thereby FS Malaysia’s obligations related to the agreement are guaranteed, on an unsecured basis, by First Solar, Inc. In connection with the Malaysian Facility Agreement, all of FS Malaysia’s obligations are secured by a first party, first legal charge over the equipment financed by the credit facilities, and the other documents, contracts, and agreements related to that equipment. Also in connection with the agreement, any payment claims of First Solar, Inc. against FS Malaysia are subordinated to the claims of the lenders.

On November 7, 2012, we entered into an amendment to the Malaysian Facility Agreement. The amendment provides for, among other things, an amendment of certain components of the debt service coverage ratio.

At December 31, 2012, equipment with a net book value of $88.5 million was pledged as collateral for these loans.

The Malaysian Facility Agreement contains various financial covenants with which we must comply, including a debt to equity ratio, a total leverage ratio, an interest coverage ratio, and a debt service coverage ratio. The agreement also contains various customary non-financial covenants with which FS Malaysia must comply, including submitting various financial reports and business forecasts to the lenders, maintaining adequate insurance, complying with applicable laws and regulations, and restrictions on FS Malaysia’s ability to sell or encumber assets, or make loan guarantees to third parties. We were in compliance with all covenants through December 31, 2012.

Director of Development of the State of Ohio

During the year ended December 31, 2005, we received a loan from the Director of Development of the State of Ohio which consisted of the following at December 31, 2012 (in thousands):

Interest Rate	Maturity	Denomination	Original Capacity	Borrowings Outstanding December 31, 2012	Availability December 31, 2012
2.25%	2015	USD	$15,000	$4,527	$—

At December 31, 2012, land and buildings with net book values of $18.4 million were pledged as collateral for this loan.

Future Principal Payments

At December 31, 2012, future principal payments on our long-term debt, excluding payments related to capital leases, which are disclosed in Note 17. “Commitments and Contingencies,” to these consolidated financial statements, were due as follows (in thousands):

2013	$63,046
2014	63,083
2015	328,578
2016	42,070
2017	35,899
Thereafter	30,664
Total long-term debt future principal payments	$563,340

Certain of our debt-financing agreements bear interest at prime, EURIBOR, KLIBOR, or LIBOR. A disruption of the credit environment, as previously experienced, could negatively impact interbank lending and, therefore, negatively impact these floating rates. An increase in EURIBOR would impact our cost of borrowing under our entire Malaysian Euro Facility Agreement, but would not impact our cost of borrowing of the floating-rate term loan under our Malaysian Facility Agreement as we entered into an interest rate swap contract to mitigate such risk. An increase in KLIBOR would not increase our cost of borrowing under our Malaysian Ringgit Facility Agreement as we entered into a cross-currency swap contract to mitigate such risk. An increase in LIBOR or prime would increase our cost of borrowing under our Revolving Credit Facility.

Note 17. Commitments and Contingencies

Financial Guarantees

In the normal course of business, we occasionally enter into agreements with third parties under which we guarantee the performance of our subsidiaries related to certain contracts, which may include development, engineering, procurement of permits and equipment, construction management, and operating and maintenance services related to solar power plants. These agreements meet the definition of a guarantee according to ASC 460, Guarantees. As of December 31, 2012 and December 31, 2011, none of these guarantees were material to our financial position.

Loan Guarantees

At December 31, 2012 and December 31, 2011, our only loan guarantees were guarantees of our own debt, as disclosed in Note 16. “Debt,” to these consolidated financial statements.

Commercial Commitments

During the normal course of business, we enter into commercial commitments in the form of letters of credit, surety bonds, and bank guarantees to provide financial and performance assurance to third parties. Our Revolving Credit Facility provides us the capacity to issue up to $600.0 million in letters of credit at a fee equal to the applicable margin for Eurocurrency revolving loans and a fronting fee. As of December 31, 2012, we had $130.9 million in letters of credit issued under the Revolving Credit Facility with a remaining availability of $199.1 million, for the issuance of letters of credit. The majority of these letters of credit were supporting our systems business. In addition, as of December 31, 2012, we had $40.7 million in bank guarantees issued outside of our Revolving Credit Facility, some of which were posted by certain of our foreign subsidiaries and $34.6 million in surety bonds outstanding primarily for our systems projects.

Lease Commitments

We lease our corporate headquarters in Tempe, Arizona and administrative, research and development, business and marketing development, customer support, and government affairs offices throughout the United States and the rest of the world under non-cancelable operating leases. These leases may require us to pay property taxes, common area

maintenance, and certain other costs in addition to base rent. We also lease certain machinery and equipment under operating and capital leases. Future minimum payments under all of our non-cancelable leases are as follows as of December 31, 2012 (in thousands):

	Capital Leases	Operating Leases	Total
2013	$556	$11,457	$12,013
2014	465	10,454	10,919
2015	459	9,776	10,235
2016	459	9,500	9,959
2017	433	9,569	10,002
Thereafter	42	14,104	14,146
Total minimum lease payments	2,414	$64,860	$67,274
Less amounts representing interest	(459)		
Present value of minimum lease payments	1,955		
Less current portion of obligations under capital leases	(344)		
Noncurrent portion of obligations under capital leases	$1,611		

Our rent expense was $19.2 million, $16.1 million, and $16.3 million in each of the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

Purchase Commitments

We purchase raw materials for inventory, services, and manufacturing equipment from a variety of vendors. During the normal course of business, in order to manage manufacturing lead times and help assure an adequate supply, we enter into agreements with suppliers that either allow us to procure goods and services when we choose or that establish purchase requirements. In certain instances, the agreements with purchase requirements allow us the option to cancel, reschedule, or adjust our requirements based on our business needs prior to firm orders being placed. Consequently, only a portion of our purchase commitments are firm, non-cancelable and unconditional. At December 31, 2012, our obligations under firm, non-cancelable, and unconditional agreements were $697.2 million, of which, $8.1 million was for commitments related to capital purchases. $496.4 million of our purchase obligations are due in 2013.

Product Warranties

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

From time to time, we have taken remediation actions in respect of affected modules beyond our limited warranty obligation, and we may elect to do so in the future, in which case we would incur additional expenses. Such potential voluntary future remediation actions beyond our limited warranty obligation could have a material adverse effect on our results of operations if we commit to any such remediation actions.

Product warranty activities during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 were as follows (in thousands):

	December 31, 2012	December 31, 2011	December 31, 2010
Product warranty liability, beginning of period	$ 157,742	$ 27,894	$ 22,583
Accruals for new warranties issued	40,863	22,411	18,309
Settlements	(60,644)	(24,425)	(24,616)

Change in estimate of product warranty liability (1)	53,635	131,862	11,618
Product warranty liability, end of period	$ 191,596	$ 157,742	$ 27,894
Current portion of warranty liability	$ 90,581	$ 78,637	$ 11,226
Noncurrent portion of warranty liability	$ 101,015	$ 79,105	$ 16,668

(1) Changes in estimate of product warranty liability during 2012 includes a net increase to our best estimate of $22.6 million in the first quarter of 2012 partially related to a net increase in the expected number of replacement modules required for

certain remediation efforts related to the manufacturing excursion that occurred between June 2008 and June 2009. Such estimated increase was primarily due to the completion of the analysis on certain outstanding claims as of December 31, 2011. The remaining portion of this increase was primarily related to a change in estimate in the first quarter of 2012 for the market value of the modules that we estimate will be returned to us under the voluntary remediation efforts that meet the required performance standards to be re-sold as refurbished modules. If the actual market value for such refurbished modules is less than the estimated market value for such modules, we may be required to incur additional expense for further write-downs.

Changes in estimate of product warranty liability during 2011 includes increases to our best estimate during the fourth quarter of 2011 of $114.5 million primarily related to: (i) $70.1 million due to a net increase in the expected number of replacement modules required for certain remediation efforts related to the manufacturing excursion that occurred between June 2008 and June 2009. Such estimated increase was primarily due to additional information received during the quarter from completed remediation efforts at certain sites and from the evaluation of information available after completion of the analysis on certain outstanding claims. Such additional information provided a further understanding of, and additional data regarding, the number of replacement modules expected to be required in connection with our remediation efforts; and (ii) $37.8 million for an increase in the expected number of warranty claims primarily due to increases related to future claims expected due to modules installed in certain climates.

At December 31, 2012, our accrued liability for product warranty was $191.6 million. We have historically estimated our product warranty liability for power output and defects in materials and workmanship under normal use and service conditions to have an estimated warranty return rate of approximately 3% of modules covered under warranty. A 1 percentage point change in the estimated warranty return rate would change estimated product warranty liability by approximately $46 million.

Systems Repurchases

Under the sales arrangements for a limited number of our solar power projects, we may be required to repurchase such projects if certain events occur, such as not achieving commercial operation of the project within a certain timeframe.

Although we consider the possibility that we would be required to repurchase any of our solar power projects to be remote, our current working capital and other available sources of liquidity may not be sufficient in order to make any required repurchase. If we are required to repurchase a solar power project we would have the ability to market and sell such project at then current market pricing, which could be at a lower than expected price to the extent the event requiring a repurchase impacts the project’s marketability. Our liquidity may also be impacted as the time between the repurchase of a project and the potential sale of such repurchased project could take several months.

For any sales arrangements that have such conditional repurchase clauses, in accordance with real estate accounting requirements, we will not recognize revenue on such sales arrangements until the conditional repurchase clauses are of no further force or effect and all other necessary revenue recognition criteria have been met.

Legal Proceedings

Class Action

On March 15, 2012, a purported class action lawsuit titled Smilovits v. First Solar, Inc., et al., Case No. 2:12-cv-00555-DGC, was filed in the United States District Court for the District of Arizona (hereafter “Arizona District Court”) against the Company and certain of our current and former directors and officers. The complaint was filed on behalf of purchasers of the Company’s securities between April 30, 2008, and February 28, 2012. The complaint generally alleges that the defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of

1934 by making false and misleading statements regarding the Company's financial performance and prospects. The action includes claims for damages, and an award of costs and expenses to the putative class, including attorneys' fees.

On July 23, 2012, the Arizona District Court issued an order appointing as lead plaintiffs in the class action the Mineworkers' Pension Scheme and British Coal Staff Superannuation Scheme (collectively "Pension Schemes"). The Pension Schemes filed an amended complaint on August 17, 2012, which contains similar allegations and seeks similar relief as the original complaint. Defendants filed a motion to dismiss on September 14, 2012. On December 17, 2012, the Court denied the motion to dismiss. Defendants answered the complaint on January 29, 2013.

The action is still in the initial stages and there has been no discovery. Accordingly, we are not in a position to assess whether

any loss or adverse effect on our financial condition is probable or remote or to estimate the range of potential loss, if any. The Company believes it has meritorious defenses and will vigorously defend this action.

Derivative Actions

On April 3, 2012, a derivative action titled Tsevegmid v. Ahearn, et al., Case No. 1:12-cv-00417-CJB, was filed by a putative stockholder on behalf of the Company in the United States District Court for the District of Delaware (hereafter "Delaware District Court") against certain current and former directors and officers of the Company, alleging breach of fiduciary duties and unjust enrichment. The complaint generally alleges that from June 1, 2008, to March 7, 2012, the defendants caused or allowed false and misleading statements to be made concerning the Company's financial performance and prospects. The action includes claims for, among other things, damages in favor of the Company, certain corporate actions to purportedly improve the Company's corporate governance, and an award of costs and expenses to the putative plaintiff stockholder, including attorneys' fees. On April 10, 2012, a second derivative complaint was filed in the Delaware District Court. The action, titled Brownlee v. Ahearn, et al., Case No. 1:12-cv-00456-CJB, contains similar allegations and seeks similar relief to the Tsevegmid action. By Court order on April 30, 2012, pursuant to the parties' stipulation, the Tsevegmid action and the Brownlee action were consolidated into a single action in the Delaware District Court. On May 15, 2012, defendants filed a motion challenging Delaware as the appropriate venue for the consolidated action. The Court has not yet ruled on that motion.

On April 12, 2012, a derivative complaint was filed in the Arizona District Court, titled Tindall v. Ahearn, et al., Case No. 2:12-cv-00769-ROS. In addition to alleging claims and seeking relief similar to the claims and relief asserted in the Tsevegmid and Brownlee actions, the Tindall complaint alleges violations of Sections 14(a) and 20(b) of the Securities Exchange Act of 1934. On April 19, 2012, a second derivative complaint was filed in the Arizona District Court, titled Nederhood v. Ahearn, et al., Case No. 2:12-cv-00819-JWS. The Nederhood complaint contains similar allegations and seeks similar relief to the Tsevegmid and Brownlee actions. On May 17, 2012 and May 30, 2012, respectively, two additional derivative complaints, containing similar allegations and seeking similar relief as the Nederhood complaint, were filed in Arizona District Court: Morris v. Ahearn, et al., Case No. 2:12-cv-01031-JAT and Tan v. Ahearn, et al., 2:12-cv-01144-NVW.

On July 17, 2012, the Arizona District Court issued an order granting First Solar's motion to transfer the derivative actions to Judge David Campbell, the judge to whom the Smilovits class action is assigned. On August 8, 2012, the Court consolidated the four derivative actions pending in Arizona District Court, and on August 31, 2012, Plaintiffs filed an amended complaint. Defendants filed a motion to stay the action on September 14, 2012. On December 17, 2012, the Court granted Defendants motion to stay the action, pending resolution of the Smilovits class action.

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

Note 18. Stockholders' Equity

Preferred Stock

We have authorized 30,000,000 shares of undesignated preferred stock, $0.001 par value, none of which was issued and outstanding at December 31, 2012. Our board of directors is authorized to determine the rights, preferences, and restrictions on any series of preferred stock that we may issue.

Common Stock

We have authorized 500,000,000 shares of common stock, $0.001 par value, of which 87,145,323 shares were issued and outstanding at December 31, 2012. Each share of common stock has the right to one vote. We have not declared or paid any dividends through December 31, 2012.

Note 19. Share-Based Compensation

We measure share-based compensation cost at the grant date based on the fair value of the award and recognize this cost as compensation expense over the required or estimated service period for awards expected to vest, in accordance with ASC 718, Compensation - Stock Compensation. The share-based compensation expense that we recognized in our consolidated statements of operations for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 was as follows (in thousands):

	2012	2011	2010
Share-based compensation expense included in:			
Cost of sales	$22,842	$34,986	$27,895
Research and development	7,149	14,984	10,467
Selling, general and administrative	5,315	60,852	59,388
Production start-up	794	3,266	1,872
Restructuring	871	340	—
Total share-based compensation expense	$36,971	$114,428	$99,622

We increased our estimated forfeiture rate for outstanding awards in the second and third quarters of 2012, which was recorded as a cumulative adjustment in accordance with ASC 718. The increase in forfeiture rate was primarily due to our restructuring activities discussed in Note 4. “Restructuring,” which caused us to experience an increase in actual forfeitures during the second and third quarters of 2012 compared to historical experience prior to such restructuring initiatives. As of December 31, 2012, our current forfeiture rate estimate includes an expectation that the forfeiture experience from 2012 will continue over the remaining term of our outstanding share-based compensation awards.

The share-based compensation expense that we recognize in our results of operations is based on the number of awards expected to ultimately vest; therefore, the actual award amounts have been reduced for estimated forfeitures. ASC 718 requires us to estimate the number of awards that we expect to vest at the time the awards are granted and revise those estimates, if necessary, in subsequent periods. We estimate the number of awards that we expect to vest based on our historical experience with forfeitures, giving consideration to whether future forfeiture behavior might be expected to differ from past behavior. We recognize compensation cost for awards with graded vesting schedules on a straight-line basis over the requisite service periods for each separately vesting portion of the awards as if each award was in substance multiple awards.

Our forfeiture rate assumptions, which estimates the share-based awards that will ultimately vest, requires judgment, and to the extent actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period of change and could be materially different from share-based compensation expense recorded in prior periods.

The following table presents our share-based compensation expense by type of award for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

	2012	2011	2010
Stock options	$273	$887	$2,530
Restricted stock and performance units	36,283	114,959	96,307
Unrestricted stock	845	866	658
Stock purchase plan	761	119	—
Net amount (absorbed into)/released from inventory	(1,191)	(2,403)	127
Total share-based compensation expense	$36,971	$114,428	$99,622

Share-based compensation cost capitalized in our inventory was $4.5 million, $3.3 million, and $0.9 million at December 31, 2012, December 31, 2011, and December 31, 2010, respectively. As of December 31, 2012, we had no unrecognized share-based compensation cost related to unvested stock option awards, and $112.3 million of unrecognized share-based compensation cost related to unvested restricted stock units, which we expect to recognize as an expense over a weighted-average period of approximately 2.2 years.

During the years ended December 31, 2012, December 31, 2011, and December 31, 2010, we recognized an income tax benefit in our statement of operations of $12.3 million, $35.3 million, and $29.7 million, respectively, for share-based compensation costs incurred during those years.

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

Share-Based Compensation Plans

During 2003, we adopted our 2003 Unit Option Plan (“the 2003 Plan”). Under the 2003 Plan, we granted non-qualified

options to purchase common shares of First Solar, Inc. to associates of First Solar, Inc. (including any of its subsidiaries) and non-employee individuals and entities that provide services to First Solar, Inc. or any of its subsidiaries. The 2003 Plan is administered by a committee appointed by our board of directors. Our board of directors terminated the 2003 Plan in the first quarter of 2012, and accordingly, on February 21, 2012, the remaining 1,914,879 shares were retired.

During 2006, we adopted our 2006 Omnibus Incentive Compensation Plan ("the 2006 Plan"). Under the 2006 Plan, directors, associates, and consultants of First Solar, Inc. (including any of its subsidiaries) were eligible to participate. The 2006 Plan was administered by the compensation committee of our board of directors (or any other committee designated by our board of directors), which was authorized to, among other things, determine who would receive grants and determine the exercise price and vesting schedule of the awards made under the 2006 Plan. The 2006 Plan provided for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock units, performance units, cash incentive awards, and other equity-based and equity-related awards.

During 2010, the 2006 Plan was replaced by our 2010 Omnibus Incentive Compensation Plan ("the 2010 Plan"). Upon approval by our shareholders, the 2006 Plan share reserve of 2,108,175 shares was transferred to the 2010 Plan and any forfeitures under the 2006 Plan become available for grant under the 2010 Plan.

The 2010 Plan differs from the 2006 Plan primarily in that the 2010 Plan (i) incorporates additional performance criteria applicable to performance compensation awards and enables us to grant "performance based compensation" within the meaning of Section 162(m) of the Internal Revenue Code, (ii) reflects changes in the law (such as Section 409A of the Internal Revenue Code), and (iii) responds to other compensation and governance trends. Under the 2010 Plan, directors, officers, employees, and consultants of First Solar, Inc. (including any of its subsidiaries) are eligible to participate. The 2010 Plan is administered by the compensation committee of our board of directors (or any other committee designated by our board of directors), which is authorized to, among other things, determine who will receive grants and determine the exercise price and vesting schedule of the awards made under the plan. Our board of directors may amend, modify, or terminate the 2010 Plan without the approval of our stockholders, except stockholder approval is required for amendments that would increase the maximum number of shares of our common stock available for awards under the plan, increase the maximum number of shares of our common stock that may be delivered by incentive stock options, or modify the requirements for participation in the 2010 Plan.

The 2010 Plan provides for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted shares, restricted stock units, performance units, cash incentive awards, and other stock-based awards, dividends and dividend equivalents, and performance compensation awards. The maximum number of new shares of our common stock that may be delivered by awards granted under the 2010 Plan is 6,000,000, plus any shares that remain or otherwise become available under the terms of the 2006 Plan, of which, the maximum number that may be delivered by incentive stock options is 6,000,000. Also, the shares underlying forfeited, expired, terminated, or cancelled awards, or shares surrendered as payment for taxes required to be withheld become available for new award grants. We may not grant awards under the 2010 Plan after 2020, which is the tenth anniversary of the 2010 Plan's approval by our stockholders. At December 31, 2012, 3,361,775 shares were available for grant under the 2010 Plan.

Stock Options

Following is a summary of our stock options as of December 31, 2012 and changes during the year then ended:

		Weighted Average		
	Number of Shares Under Option	Exercise Price	Remaining Contractual Term (Years)	Aggregate Intrinsic Value

Options outstanding at December 31, 2011	166,060	$89.04		
Options granted	—	$—		
Options exercised	(29,145)	$6.00		
Options forfeited or expired	(26,456)	$172.93		
Options outstanding at December 31, 2012	110,459	$90.85	1.3	$782,209
Options vested and exercisable at December 31, 2012	110,459	$90.85	1.3	$782,209

Stock options granted under the 2003 Plan and 2006 Plan have various vesting provisions and have all vested as of December 2012. The total fair value of stock options vesting during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 were $0.0 million, $3.7 million, and $6.9 million, respectively. During the years ended December 31, 2012,

December 31, 2011, and December 31, 2010, we received net cash proceeds of $0.2 million, $8.3 million, and $9.4 million, respectively, from the exercise of employee stock options. The total intrinsic value of employee stock options exercised was $0.7 million, $24.3 million, and $51.3 million during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

The following table presents the exercise price and remaining life information about options outstanding at December 31, 2012:

	Options Outstanding			Options Exercisable	
Exercise Price Range	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Number of Shares	Weighted Average Exercise Price
$2.06	11,800	$2.06	0.7	11,800	$2.06
$20.00	39,744	$20.00	0.9	39,744	$20.00
$27.78 - $32.81	7,690	$30.53	1.0	7,690	$30.53
$120.28	7,141	$120.28	1.4	7,141	$120.28
$160.00	34,084	$160.00	1.8	34,084	$160.00
$266.90	10,000	$266.90	2.6	10,000	$266.90
	110,459	$90.85	1.3	110,459	$90.85

We estimated the fair value of each stock option awarded on its grant date using the Black-Scholes-Merton closed-form option valuation formula.

During the years ended December 31, 2012, December 31, 2011, and December 31, 2010, we did not grant any stock options.

Our stock options expire seven to ten years from their grant date. None of our stock options were granted outside of the Plans.

Restricted Stock Units

We began issuing restricted stock units in the second quarter of 2007 and all have been granted under the 2006 Plan and 2010 Plan. We issue shares to the holders of restricted units on the date the restricted stock units vest. The majority of shares issued are net of the minimum statutory withholding requirements, which we pay on behalf of our associates. As a result, the actual number of shares issued will be less than the number of restricted stock units granted. Prior to vesting, restricted stock units do not have dividend equivalent rights and do not have voting rights, and the shares underlying the restricted stock units are not considered issued and outstanding.

Following is a summary of our restricted stock and performance units as of December 31, 2012 and changes during the year then ended:

	Number of Shares	Weighted Average Grant-Date Fair Value
Restricted stock units nonvested at December 31, 2011	1,964,514	$137.83
Restricted stock units granted	5,499,748	$28.97
Restricted stock units vested	(595,721)	$150.39

Restricted stock units forfeited	(1,133,333)	$65.16
Restricted stock units nonvested at December 31, 2012	5,735,208	$45.20

For the years ended December 31, 2011 and 2010 our weighted average grant-date fair value for restricted stock units granted in such years was $140.43 and $150.79, respectively. We estimate the fair value of our restricted stock unit awards based on our stock price on the grant date.

Stock Awards

During the years ended December 31, 2012, December 31, 2011, and December 31, 2010, we awarded 37,993, 12,266, and

5,149, respectively, of fully vested, unrestricted shares of our common stock to the independent members of our board of directors. We recognized $0.8 million, $0.9 million, and $0.7 million of share-based compensation expense for these awards during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

Stock Purchase Plan

Our shareholders approved a stock purchase plan for employees in June 2010. During the year ended December 31, 2011, we began our stock purchase plan. The plan allows employees to purchase our common stock through payroll withholdings over a six-month offering period at 85% of the closing share price on the last day of the offering period. The first offering period began on November 15, 2011, which is the offering date for that period. We estimate the fair value of the stock purchase plan compensation cost based primarily on our stock price on the offering date.

Note 20. Benefit Plans

We offer a 401(k) retirement savings plan into which all of our U.S. associates (our term for employees) can voluntarily contribute a portion of their annual salaries and wages, subject to legally prescribed dollar limits. Our contributions to our associates' plan accounts are made at the discretion of our board of directors and are based on a percentage of the participating associates' contributions. Associate contributions are matched dollar-for-dollar up to the first 4%. Our contributions to the plan were $7.0 million, $6.9 million, and $5.8 million for the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively. None of these benefit plans offered participants an option to invest in our common stock.

We also offer certain retirement savings plans to certain non-U.S. associates. These plans are managed in accordance with applicable local statutes and practices and are defined contribution plans. Our contributions to these plans were $1.3 million, $1.4 million, and $1.0 million during the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively.

Note 21. Income Taxes

The components of our income tax expense (benefit) were as follows (in thousands):

	December 31, 2012	December 31, 2011	December 31, 2010
Current expense:			
Federal	$ 37,882	$ 112,895	$ 92,728
State	(1,085)	5,345	696
Foreign	6,799	23,045	62,492
Total current expense	43,596	141,285	155,916
Deferred expense (benefit):			
Federal	7,374	(140,435)	(56,018)
State	(2,965)	(7,846)	(5,231)
Foreign	8,529	(7,224)	3,209
Total deferred expense (benefit)	12,938	(155,505)	(58,040)
Total income tax expense (benefit)	$ 56,534	$ (14,220)	$ 97,876

The current tax expense listed above does not reflect income tax benefits of $4.4 million, $103.9 million, and $61.6 million for the years ended December 31, 2012, December 31, 2011, and December 31, 2010, respectively, related to excess tax deductions on share-based compensation because we recorded these benefits directly to additional paid-in capital, pursuant to ASC 740, Income Taxes, and ASC 718, Compensation - Stock Compensation.

The U.S. and non-U.S. components of our (loss) income before income taxes were as follows (in thousands):

	December 31, 2012	December 31, 2011	December 31, 2010
U.S. (loss) income	$ 96,766	$ (366,903)	$ 43,737
Non-U.S. (loss) income	(136,570)	313,190	718,340
(Loss) income before income taxes	$ (39,804)	$ (53,713)	$ 762,077

On August 10, 2010, Congress enacted the Education Jobs & Medicaid Assistance Act (H.R. 1586). H.R. 1586 includes

significant international tax revenue raisers which were generally effective January 1, 2011. These tax provisions generally attempt to limit a taxpayer's ability to fully claim tax credits for previously paid foreign taxes in determining one's U.S. income tax liability. In advance of the effective date of this legislation, we decided to repatriate approximately $300 million of earnings from certain of our foreign subsidiaries to the United States. As a result of this repatriation, we have included in our 2010 results a non-cash income tax charge of $13.8 million. We have included an additional income tax charge of $5.4 million in our 2011 results in connection with this repatriation, attributable to foreign exchange rate fluctuations and the 2011 impact to the foreign tax credit arising during the repatriation period.

Our Malaysian subsidiary has been granted a long-term tax holiday that expires in 2027. The tax holiday, which generally provides for a 100% exemption from Malaysian income tax, is conditional upon our continued compliance in meeting certain employment and investment thresholds. During 2010, in connection with the expansion of our Malaysian manufacturing operations, we were granted an extension of the previously approved tax holiday by three years, contingent upon meeting additional investment requirements.

Our effective tax rates were (142.0)% and 26.5% for the years ended December 31, 2012 and December 31, 2011, respectively. Income tax (benefit) expense increased by $70.8 million during 2012 compared with 2011. The increase in income tax expense in 2012 compared to 2011 is primarily attributable to the establishment of valuation allowances against previously established deferred tax assets in certain foreign jurisdictions, operating losses generated in jurisdictions for which no tax benefit is recorded, and a greater percentage of profits earned in higher tax jurisdictions.

Our effective tax rates were 26.5% and 12.8% for the years ended December 31, 2011 and December 31, 2010, respectively. Income tax (benefit) expense decreased by $112.1 million during 2011 compared to 2010. The reduction in income tax expense in 2011 compared to 2010 is primarily attributable to the reduction in pre-tax profits during such periods and a greater percentage of profits earned in lower tax jurisdictions, offset by an increase in tax expense related to the impairment of non-deductible goodwill.

Our income tax results differed from the amount computed by applying the U.S. statutory federal income tax rate of 35% to our (loss) income before income taxes for the following reasons (in thousands):

	December 31, 2012		December 31, 2011		December 31, 2010	
	Tax	Percent	Tax	Percent	Tax	Percent
Statutory income tax (benefit) expense	$(13,931)	35.0%	$(18,799)	35.0%	$266,727	35.0%
Economic development funding benefit	—	—%	(5,762)	10.7%	—	—%
Non-deductible expenses	1,364	(3.4)%	5,352	(10.0)%	7,261	1.0%
State tax, net of federal benefit	(2,739)	6.9%	(356)	0.7%	(2,917)	(0.4)%
Effect of tax holiday	(78,313)	196.7%	(63,895)	119.0%	(139,141)	(18.3)%
Foreign tax rate differential	8,422	(21.2)%	(24,425)	45.5%	(46,865)	(6.1)%
Tax credits	(4,428)	11.1%	(2,408)	4.5%	(1,989)	(0.3)%
Repatriation	—	—%	5,440	(10.1)%	13,804	1.8%
Non-deductible goodwill	—	—%	87,995	(163.8)%	—	—%
Other	(783)	2.1%	(548)	0.9%	(605)	(0.1)%
Impact of changes in valuation allowance	146,942	(369.2)%	3,186	(5.9)%	1,601	0.2%
Reported income tax (benefit) expense	$56,534	(142.0)%	$(14,220)	26.5%	$97,876	12.8%

For the year ended December 31, 2012, the tax expense from the foreign tax rate differential primarily relates to our losses generated in Germany and Vietnam calculated at statutory tax rates of 29.3% and 25.0%, respectively, offset by income generated in Malaysia calculated at statutory tax rate of 25%, compared to the U.S. statutory tax rate of 35.0%. For the year ended December 31, 2011, the tax benefit from the foreign tax rate differential primarily relates to our income generated in Germany and Malaysia calculated at statutory tax rates of 28.5% and 25.0%, respectively, compared to the U.S. statutory tax rate of 35.0%. For the year ended December 31, 2010, the tax benefit from the foreign tax rate differential primarily relates to our income generated in Germany and Malaysia calculated at statutory tax rates of 28.6% and 25.0%, respectively, compared to the U.S. statutory tax rate of 35.0%.

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

	December 31, 2012	December 31, 2011
Deferred tax assets:		
Goodwill	$ 68,277	$ 73,013
Economic development funding	1,336	8,030
Compensation	38,198	46,539
Accrued expenses	36,089	26,877
Tax credits	162,874	160,807
Net operating losses	112,975	39,395
Inventory	5,548	4,966
Deferred expenses	18,035	18,225
Property, plant and equipment	62,640	6,302
Long term contracts	19,733	8,958
Other	4,103	—
Deferred tax assets, gross	529,808	393,112
Valuation allowance	(154,919)	(7,977)
Deferred tax assets, net of valuation allowance	374,889	385,135
Deferred tax liabilities:		
Capitalized interest	(1,673)	(2,378)
Acquisition accounting / basis difference	(15,150)	(18,731)
Investment in foreign subsidiaries	(6,386)	(1,080)
Other	(8,843)	(7,799)
Deferred tax liabilities	(32,052)	(29,988)
Net deferred tax assets and liabilities	$ 342,837	$ 355,147

Changes in our valuation allowance against our deferred tax assets were as follows during the years ended December 31, 2012 and December 31, 2011 (in thousands):

	2012	2011
Valuation allowance, beginning of year	$7,977	$4,791
Additions	146,942	3,473
Reversals	—	(287)
Valuation allowance, end of year	$154,919	$7,977

We maintained a valuation allowance of $154.9 million and $8.0 million as of December 31, 2012 and December 31, 2011, respectively, against certain of our deferred tax assets, as it is more likely than not that such amounts will not be fully realized. After applying the evaluation guidance of ASC 740 as of March 31, 2012, we concluded that as a result of our restructuring activities it was not more-likely-than-not that $12.3 million of previously established non-U.S. net deferred tax assets related to our European operations would be realized during future periods. The recording of valuation allowances was based upon management's assessment of the available evidence at March 31, 2012 and was primarily based upon the planned closure of most European operations due to reduced expected future market demand and the lack of legislative support for utility-scale solar projects in Europe. In addition, no tax benefits are being recognized in relation to 2012 for any operating losses from European operations in 2012 discussed above, in addition to operating losses from Vietnam operations.

We have not provided for $752.0 million of deferred income taxes on $2,041.1 million of undistributed earnings from non-U.S. subsidiaries because such amounts are indefinitely invested outside the United States as of December 31, 2012. These taxes would be required to be recognized when and if we determine that these amounts are not indefinitely reinvested outside the U.S.

At December 31, 2012, we had federal and aggregate state net operating loss carryforwards of $273.9 million and $83.0 million, respectively. At December 31, 2011, we had federal and aggregate state net operating loss carryforwards of $362.7 million and $142.7 million, respectively. If not used, the federal net operating loss will expire beginning in 2027 and the state net operating loss will begin to expire in 2013. The utilization of a portion of our net operating loss carryforwards is subject to an annual limitation under Section 382 of the Internal Revenue Code due to a change of ownership. However, we do not believe such annual limitation will impact our realization of the net operating loss carryforwards. Our deferred tax assets at December 31, 2012 do not include

$28.3 million of excess tax deductions from employee stock option exercises and vested restricted stock units that comprise our net operating loss carryforwards. Our stockholders' equity will be increased by up to $28.3 million if and when we ultimately realize these excess tax benefits.

At December 31, 2012 we had federal and state research and development credit carryforwards of $20.8 million and U.S. foreign tax credit carryforwards of $125.5 million available to reduce future federal and state income tax liabilities. If not used, the research and development credits and U.S. foreign tax credits will begin to expire in 2027 through 2032 and 2017 through 2022, respectively.

We account for uncertain tax positions pursuant to the recognition and measurement criteria under ASC 740.

A reconciliation of the beginning and ending amount of liabilities associated with uncertain tax positions is as follows (in thousands):

	December 31, 2012	December 31, 2011	December 31, 2010
Unrecognized tax benefits, beginning of year	$ 82,911	$ 67,905	$ 37,222
Increases related to prior year tax positions	23,616	14	—
Decreases related to prior year tax positions	—	—	(353)
Increases related to current tax positions	34,986	14,992	31,036
Unrecognized tax benefits, end of year	$ 141,513	$ 82,911	$ 67,905

An amount of $127.9 million of unrecognized tax benefits, if recognized, would reduce our annual effective tax rate. The amounts of unrecognized tax benefits listed above are based on the recognition and measurement criteria of ASC 740. However, due to the uncertain and complex application of tax regulations, it is possible that the ultimate resolution of uncertain tax positions may result in liabilities that could be materially different from these estimates. In such an event, we will record additional tax expense or tax benefit in the period in which such resolution occurs. Our policy is to recognize any interest and penalties that we might incur related to our tax positions as of component of income tax expense. We did not accrue any potential penalties and interest related to these unrecognized tax benefits during 2012, 2011, or 2010. We do not expect that our unrecognized tax benefits will significantly change within the next twelve months for tax positions taken or to be taken for periods through December 31, 2012.

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

	Tax Years
Germany	2007 - 2012
Malaysia	2007 - 2012
United States	2008 - 2012

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

Note 22. Net (Loss) Income per Share

Basic net (loss) income per share is computed by dividing net (loss) income by the weighted-average number of common shares outstanding for the period. Diluted net (loss) income per share is computed giving effect to all potential dilutive common stock, including employee stock options, restricted stock units, stock purchase plan, and

contingently issuable shares.

The calculation of basic and diluted net (loss) income per share for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 was as follows (in thousands, except per share amounts):

	2012	2011	2010
Basic net (loss) income per share			
Numerator:			
Net (loss) income	$(96,338)	$(39,493)	$664,201
Denominator:			
Weighted-average common stock outstanding	86,860	86,067	84,891
Diluted net (loss) income per share			
Denominator:			
Weighted-average common stock outstanding	86,860	86,067	84,891
Effect of stock options, restricted stock units outstanding, stock purchase plan, and contingent issuable shares	—	—	1,600
Weighted-average shares used in computing diluted net (loss) income per share	86,860	86,067	86,491

	2012	2011	2010
Per share information - basic:			
Net (loss) income per share	$(1.11)	$(0.46)	$7.82
Per share information - diluted:			
Net (loss) income per share	$(1.11)	$(0.46)	$7.68

The following number of outstanding employee stock options, restricted stock units, and stock purchase plan shares were excluded from the computation of diluted net (loss) income per share for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 as they would have had an antidilutive effect (in thousands):

	2012	2011	2010
Antidilutive shares	1,497	630	118

Note 23. Comprehensive (Loss) Income and Accumulated Other Comprehensive Income (Loss)

Comprehensive (loss) income, which includes foreign currency translation adjustments, unrealized gains and losses on derivative instruments designated and qualifying as cash flow hedges, and unrealized gains and losses on available-for-sale securities, the impact of which has been excluded from net (loss) income and reflected as components of stockholders' equity, was as follows for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

	2012	2011	2010
Net (loss) income	$(96,338)	$(39,493)	$664,201
Other comprehensive (loss) income, net of tax			
Foreign currency translation adjustments	9,896	(18,034)	(35,825)
Unrealized gain on marketable securities and restricted investments for the period (net of tax of $(1,835), $(4,447), and $(589) for 2012, 2011, and 2010, respectively)	26,829	22,356	4,225
Less: reclassification for (gains) included in net income (net of tax of $0, $866, and $(69) for 2012, 2011, and 2010, respectively)	(16)	(3,696)	(405)
Unrealized gain on marketable securities and restricted investments	26,813	18,660	3,820
Unrealized (loss) gain on derivative instruments for the period (net of tax of $2,533, $(6,357), and $0 for 2012, 2011, and 2010, respectively)	(7,478)	(25,597)	39,043
Less: reclassification for (gains) losses included in net income (net of tax of $1,774, $(11), and $0 for 2012, 2011, and 2010, respectively)	(14,015)	47,177	$(24,685)
Unrealized (loss) gain on derivative instruments	(21,493)	21,580	$14,358

Other comprehensive income (loss), net of tax	15,216	22,206	$(17,647)
Comprehensive (loss) income	$(81,122)	$(17,287)	$646,554

Components of accumulated other comprehensive income (loss) at December 31, 2012 and December 31, 2011 were as

follows (in thousands):

	2012	2011
Foreign currency translation adjustments	$(38,485)	$(48,381)
Unrealized gain on marketable securities and restricted investments (net of tax of $(6,575) and $(4,740) for 2012 and 2011, respectively)	51,243	24,431
Unrealized gain (loss) on derivative instruments (net of tax of $(2,061) and $(6,368) for 2012 and 2011, respectively)	(2,579)	18,913
Accumulated other comprehensive income (loss)	$10,179	$(5,037)

Note 24. Statement of Cash Flows

The following table presents a reconciliation of net (loss) income to net cash provided by (used in) operating activities for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 (in thousands):

	2012	2011	2010
Net (loss) income	$(96,338)	$(39,493)	$664,201
Adjustments to reconcile net (loss) income to cash provided by (used in) operating activities:			
Depreciation and amortization	262,716	235,231	156,093
Impairment of assets and liabilities	356,522	57,414	5,692
Impairment of project assets	3,253	7,933	5,277
Impairment of goodwill	—	393,365	—
Share-based compensation	36,971	114,428	99,622
Remeasurement of monetary assets and liabilities	8,509	(4,701)	625
Deferred income taxes	14,588	(155,505)	(58,040)
Excess tax benefits from share-based compensation arrangements	(27,373)	(110,836)	(69,367)
Provision for doubtful accounts receivable	4,471	10,761	(990)
Gain on sales of marketable securities, investments, and restricted investments, net	(16)	(4,581)	(336)
Gain on sale of related party equity investment	—	—	(3,596)
Other operating activities	(4,762)	(719)	(1,504)
Changes in operating assets and liabilities:			
Accounts receivable, trade and unbilled	(388,039)	(529,809)	(91,773)
Prepaid expenses and other current assets	(28,854)	(140,961)	(62,094)
Other assets	82,120	(21,908)	(7,675)
Inventories and balance of systems parts	(75,626)	(348,151)	(69,680)
Project assets and deferred project costs	(174,532)	(368,619)	(25,770)
Accounts payable	174,319	94,674	17,854
Income taxes payable	63,489	95,132	74,830
Accrued expenses and other liabilities	506,253	647,162	30,112
Accrued solar module collection and recycling liability	44,538	35,720	42,011
Total adjustments	858,547	6,030	41,291
Net cash provided by (used in) operating activities	$762,209	$(33,463)	$705,492

Note 25. Segment and Geographical Information

ASC 280, Segment Reporting, establishes standards for companies to report in their financial statements information about operating segments, products, services, geographic areas, and major customers. The method of determining what information to report is generally based on the way that management organizes the operating segments within the Company for making operating decisions and assessing financial performance.

We operate our business in two segments. Our components segment involves the design, manufacture, and sale of solar

modules which convert sunlight into electricity. Third-party customers of our components segment include project developers, system integrators, and operators of renewable energy projects.

Our second segment is our fully integrated systems business ("systems segment"), through which we provide complete turn-key PV solar power systems, or solar solutions that draw upon our capabilities, which include (i) project development, (ii) engineering, procurement, and construction ("EPC") services, (iii) operating and maintenance ("O&M") services, and (iv) project finance expertise. We may provide our full EPC services or any combination of individual products and services within our EPC capabilities depending upon the customer and market opportunity. All of our systems segment products and services are for PV solar power systems which use our solar modules, and such products and services are sold directly to investor owned utilities, independent power developers and producers, commercial and industrial companies, and other system owners.

Our Chief Operating Decision Maker ("CODM"), consisting of certain members of senior executive staff, views both our ability to provide customers with a complete PV solar power system through the fully integrated systems segment and the manufacturing of solar modules from the components segment as the drivers of our resource allocation, profitability, and cash flows. The complete PV solar power systems sold through our systems segment drive resource allocation, profitability, and cash flows through delivering state of the art construction techniques and process management to reduce the installed cost of our PV systems, and accordingly, the systems segment is considered by our CODM as a direct contributor to our profitability. Therefore, our CODM views both our components and systems segments as contributors to our operating results.

Prior to June 30, 2012, our CODM viewed the systems segment as an enabler to drive module throughput from our components segment, with a primary objective to achieve break-even results before income taxes. During the three months ended June 30, 2012, we finalized and announced the details related to our Long Term Strategic Plan, which is primarily focused on providing complete utility scale PV solar power solutions, which use our modules, to sustainable markets. Additionally, James Hughes was appointed as Chief Executive Officer. These factors led to a change in how our CODM views and measures the profitability of our operating segments and which therefore changed the information reviewed by the CODM to allocate resources and evaluate profitability of such segments.

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

After we have determined the amount of revenue earned for our systems projects following the applicable accounting guidance for the underlying sales arrangements, we allocate module revenue from the systems segment to the components segment based on how our CODM strategically views these segments. The amount of module revenue allocated from the systems segment to the components segment is equal to an estimated average selling price for such solar modules as if the modules were sold to a third party EPC customer through a long term supply agreement that establishes pricing at the beginning of each year. In order to develop the estimate of the average selling price used for this revenue allocation, we utilize a combination of our actual third party module sale transactions, our competitor benchmarking and our internal pricing lists used to provide module price quotes to customers or potential customers. This allocation methodology and the estimated average selling prices are consistent with how our CODM views the value proposition our components business brings to a utility scale systems project and the financial information reviewed by our CODM in assessing our components business performance.

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

Prior period segment information has been restated to conform to the December 31, 2012 presentation. None of the changes

in the measure of our operating segments profitability impact the determination of our reportable operating segments or our previously reported consolidated financial results.

Financial information about our operating segments during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 was as follows (in millions):

	Fiscal Year Ended December 31, 2012		
	Components	Systems	Total
Net sales	$1,185,958	$2,182,587	$3,368,545
Gross profit	$55,762	$796,987	$852,749
(Loss) income before income taxes	$(687,767)	$647,963	$(39,804)
Goodwill	$—	$65,444	$65,444
Total assets	$3,920,385	$2,428,307	$6,348,692
	Fiscal Year Ended December 31, 2011		
	Components	Systems	Total
Net sales	$1,941,583	$824,624	$2,766,207
Gross profit	$666,144	$305,607	$971,751
Loss before income taxes	$(24,451)	$(29,262)	$(53,713)
Goodwill	$—	$65,444	$65,444
Total assets	$3,876,696	$1,900,918	$5,777,614
	Fiscal Year Ended December 31, 2010		
	Components	Systems	Total
Net sales	$2,284,646	$278,869	$2,563,515
Gross profit (loss)	$1,215,145	$(30,299)	$1,184,846
Income (loss) before income taxes	$916,268	$(154,191)	$762,077
Goodwill	$393,365	$39,923	$433,288
Total assets	$3,455,133	$925,270	$4,380,403

Product Revenue

The following table sets forth the total amounts of solar modules and solar power systems revenue recognized for the years ended December 31, 2012, December 31, 2011, and December 31, 2010. For the purposes of the following table, (i) “Solar module revenue” is composed of total revenues from the sale of solar modules to third parties, which does not include any systems segment product or service offerings, (ii) “Solar power system revenue” is composed of total revenues from the sale of our solar power systems and related products and services including the solar modules installed in such solar power systems.

(Dollars in thousands)	2012	2011	2010
Solar module revenue	$325,427	$1,523,695	$1,986,746
Solar power system revenue	3,043,118	1,242,512	576,769
Net sales	$3,368,545	$2,766,207	$2,563,515

The following table presents net sales for the years ended December 31, 2012, December 31, 2011, and December 31, 2010 by geographic region, which is based on the customer country of invoicing (in thousands):

	2012	2011	2010
United States	$2,696,972	$1,238,132	$333,844
Germany	104,689	639,426	1,177,981
France	70,173	413,380	363,658
Canada	389,427	105,932	312,672
All other foreign countries	107,284	369,337	375,360
Net sales	$3,368,545	$2,766,207	$2,563,515

The following table presents long-lived assets, excluding financial instruments, deferred tax assets, investment in related party, goodwill, and intangible assets at December 31, 2012, December 31, 2011, and December 31, 2010 by geographic region, based on the physical location of the assets (in thousands):

	2012	2011	2010
United States	$1,343,946	$1,069,358	$627,733
Malaysia	837,559	838,711	871,527
Germany	32,500	260,712	170,787
All other foreign countries	178,245	342,448	80,882
Long-lived assets	$2,392,250	$2,511,229	$1,750,929

Note 26. Concentrations of Credit and Other Risks

Customer Concentration. The following customers each comprised 10% or more of our total net sales during the years ended December 31, 2012, December 31, 2011, and December 31, 2010 and/or 10% or more of our total accounts receivable during the years ended December 31, 2012 and December 31, 2011 (dollars in thousands):

	2012				2011				2010	
	Net Sales	% of Total NS	A/R Outstanding	% of Total A/R	Net Sales	% of Total NS	A/R Outstanding	% of Total A/R	Net Sales	% of Total NS
Customer #1	$720,056	21 %	$ 134,108	24 %	$993,709	36 %	$ 43,030	14 %	*	*
Customer #2	*	*	*	*	$408,508	15 %	$ 41,974	14 %	$317,485	12 %
Customer #3	$773,407	23 %	*	*	*	*	$ 110,184	35 %	*	*
Customer #4	*	*	*	*	*	*	*	*	$393,758	15 %
Customer #5	*	*	*	*	*	*	*	*	$293,426	11 %
Customer #6	$701,648	21 %	*	*	*	*	*	*	*	*
Customer #7	*	*	$ 120,334	22 %	*	*	*	*	*	*

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

Credit Risk. We have certain financial and derivative instruments that subject us to credit risk. These consist primarily of cash, cash equivalents, marketable securities, restricted investments, trade accounts receivable, interest rate swap contracts, cross-currency swap contracts, and foreign exchange forward contracts. We are exposed to credit losses in the event of nonperformance by the counterparties to our financial and derivative instruments. We place cash, cash

equivalents, marketable securities, restricted investments, interest rate swap contracts, cross-currency contracts, and foreign exchange forward contracts with various high-quality financial institutions and limit the amount of credit risk from any one counterparty. We continuously evaluate the credit standing of our counterparty financial institutions. For the years ended December 31, 2012, December 31, 2011, and December 31, 2010, our net sales were primarily concentrated among three or fewer customers. We monitor the financial condition of our customers and perform credit evaluations whenever deemed necessary. Depending upon the sales arrangement, we may require some form of payment security from our customers including bank guarantees or commercial letters of credit.

Geographic Risk. Our third-party solar module net sales were historically sold to customers for use in solar power systems concentrated in a single geographic region, the European Union. Our solar power systems sales are presently predominantly in the United States and Canada. These concentrations of our sales in limited geographic regions exposes us to local economic risks and local public policy and regulatory risk in those regions.

Production. Our products include components that are available from a limited number of suppliers or sources. Shortages of

essential components could occur due to interruptions of supply or increases in demand and could impair our ability to meet demand for our products. Our modules are presently produced in facilities in Perrysburg, Ohio, and Kulim, Malaysia. Damage to or disruption of facilities could interrupt our business and impair our ability to generate net sales.

International Operations. During the year ended December 31, 2012, we derived 20% of our net sales from sales outside our country of domicile, the United States. Therefore, our financial performance could be affected by events such as changes in foreign currency exchange rates, trade protection measures, long accounts receivable collection patterns, and changes in regional or worldwide economic or political conditions.

INDEX TO EXHIBITS

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

Exhibit Number		Exhibit Description	Incorporated by Reference				Filed Herewith
			Form	File No.	Date of First Filing	Exhibit Number	
3.1		Amended and Restated Certificate of Incorporation of First Solar, Inc.	S-1/A	333-135574	9/18/06	3.1	
3.2		Amended and Restated Bylaws of First Solar, Inc.	8-K	001-33156	10/31/11	3.1	
4.1		Loan Agreement dated December 1, 2003, among First Solar US Manufacturing, LLC, First Solar Property, LLC and the Director of Development of the State of Ohio	S-1/A	333-135574	9/18/06	4.2	
4.2		Loan Agreement dated July 1, 2005, among First Solar US Manufacturing, LLC, First Solar Property, LLC and Director of Development of the State of Ohio	S-1/A	333-135574	9/18/06	4.3	
4.3		Waiver Letter dated June 5, 2006, from the Director of Development of the State of Ohio	S-1/A	333-135574	10/10/06	4.16	
4.4	†	Facility Agreement dated May 6, 2008 between First Solar Malaysia Sdn. Bhd., as borrower, and IKB Deutsche Industriebank AG, as arranger, NATIXIS Zweigniederlassung Deutschland, as facility agent and original lender, AKA Ausfuhrkredit-Gesellschaft mbH, as original lender, and NATIXIS Labuan Branch as security agent	8-K	001-33156	5/12/08	10.1	
4.5		First Demand Guaranty dated May 6, 2008 by First Solar Inc, as guarantor, in favor of IKB Deutsche Industriebank AG, NATIXIS Zweigniederlassung Deutschland, AKA Ausfuhrkredit-Gesellschaft mbH and NATIXIS Labuan Branch	8-K	001-33156	5/12/08	10.2	
4.6		Credit Agreement, dated as of September 4, 2009, among First Solar, Inc., First Solar Manufacturing GmbH, the lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Bank of America and The Royal Bank of Scotland plc, as Documentation Agents, and Credit Suisse, Cayman Islands Branch, as Syndication Agent	8-K	001-33156	9/10/09	10.1	
4.7		Charge of Company Shares, dated as of September 4, 2009, between First Solar, Inc., as Chargor, and JPMorgan Chase Bank, N.A., as Security Agent, relating to 66% of the shares of First Solar FE Holdings Pte. Ltd. (Singapore)	8-K	001-33156	9/10/09	10.2	
4.8		German Share Pledge Agreements, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar Manufacturing GmbH, First Solar GmbH, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.3	
4.9			8-K	001-33156	9/10/09	10.4	

	Guarantee and Collateral Agreement, dated as of September 4, 2009, by First Solar, Inc. in favor of JPMorgan Chase Bank, N.A., as Administrative Agent				
4.10	Guarantee, dated as of September 8, 2009, between First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as German Guarantors, and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.5
4.11	Assignment Agreement, dated as of September 4, 2009, between First Solar Holdings GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.6
4.12	Assignment Agreement, dated as of September 4, 2009, between First Solar GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.7
4.13	Assignment Agreement, dated as of September 8, 2009, between First Solar Manufacturing GmbH and JPMorgan Chase Bank, N.A., as Administrative Agent	8-K	001-33156	9/10/09	10.8
4.14	Security Trust Agreement, dated as of September 4, 2009, between First Solar, Inc., First Solar Holdings GmbH, First Solar GmbH, First Solar Manufacturing GmbH, as Security Grantors, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other Secured Parties party thereto	8-K	001-33156	9/10/09	10.9
4.15	Amended and Restated Credit Agreement, dated as of October 15, 2010, among First Solar, Inc., the borrowing subsidiaries party thereto, the lenders party thereto, Bank of America N.A. and The Royal Bank of Scotland PLC, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	10/20/10	10.1

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

4.23		Amendment Letter, dated as of November 8, 2011, to the Facility Agreement, dated June 30, 2011, among First Solar Malaysia Sdn. Bhd., as borrower, First Solar, Inc., as guarantor, CIMB Investment Bank Berhad, Maybank Investment Bank Berhad and RHB Investment Bank Berhad, as arrangers, CIMB Investment Bank Berhad as facility agent and security agent, and the original lenders party thereto	10-K	001-33156	2/29/12	10.1	
4.24		Third Amendment, dated as of October 23, 2012 to the Amended and Restated Credit Agreement dated as of October 15, 2010, among First Solar, Inc., the lenders party thereto, Bank of America, N.A. and The Royal Bank of Scotland plc, as documentation agents, Credit Suisse, Cayman Islands Branch, as syndication agent, and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-33156	10/26/12	10.1	
4.25		Amendment dated as of November 7, 2012 to the Export Financing Facility Agreement dated May 6, 2008 (as amended, the “Malaysian Facility Agreement”) among FS Malaysia, the lenders party thereto, and Natixis Zweigniederlassung Deutschland, as Facility Agent.	—	—	—	—	X
10.1	†	Framework Agreement on the Sale and Purchase of Solar Modules dated April 10, 2006, between First Solar GmbH and Blitzstrom GmbH	S-1/A	333-135574	11/8/06	10.1	
10.2	†	Amendment to the Framework Agreement dated April 10, 2006 on the Sale and Purchase of Solar Modules between First Solar GmbH and Blitzstrom GmbH	10-K	001-33156	3/16/07	10.02	
10.13		Guarantee Agreement between Michael J. Ahearn and IKB Deutsche Industriebank AG	S-1/A	333-135574	9/18/06	10.7	
10.14		Grant Decision dated July 26, 2006, between First Solar Manufacturing GmbH and InvestitionsBank des Landes Brandenburg	S-1/A	333-135574	10/10/06	10.9	
10.15		2003 Unit Option Plan	S-1/A	333-135574	9/18/06	4.14	

10.16	Form of 2003 Unit Option Plan Agreement	S-1/A	333-135574	9/18/06	4.15	
10.17	Amended and Restated 2006 Omnibus Incentive Compensation Plan	10-Q	001-33156	5/1/09	10.2	
10.18	Form of Change in Control Severance Agreement	S-1/A	333-135574	10/25/06	10.15	
10.19	Guaranty dated February 5, 2003	S-1/A	333-135574	10/25/06	10.16	
10.20	Form of Director and Officer Indemnification Agreement	—	—	—	—	X
10.21	Amended and Restated Employment Agreement and Amended and Restated Change in Control Agreement dated November 3, 2008, between First Solar, Inc. and Michael J. Ahearn	10-Q	001-33156	10/31/08	10.01	
10.22	Amended and Restated Employment Agreement and Amended and Restated Change in Control Agreement dated November 3, 2008, between First Solar, Inc. and John Carrington	10-Q	001-33156	10/31/08	10.02	
10.23	Amended and Restated Employment Agreement and Amended and Restated Change in Control Agreement dated November 11, 2008, between First Solar, Inc. and Bruce Sohn	10-K	001-33156	2/25/09	10.33	
10.24	Amended and Restated Employment Agreement and Amended and Restated Change in Control Agreement dated December 29, 2008, between First Solar, Inc. and John T. Gaffney	10-K	001-33156	2/25/09	10.34	
10.25	Amended and Restated Employment Agreement and Amended and Restated Change in Control Agreement dated December 30, 2008 between First Solar, Inc. and Jens Meyerhoff	10-K	001-33156	2/25/09	10.35	
10.26	Employment Agreement and Change in Control Severance Agreement, each dated February 20, 2009, between First Solar, Inc. and Mary Elizabeth Gustafsson	10-K	001-33156	2/25/09	10.36	
10.27	Employment Agreement and Change in Control Severance Agreement, each dated as of September 9, 2009, between First Solar, Inc. and Robert J. Gillette	8-K	001-33156	9/10/09	10.1	
10.28	Amended and Restated Employment Agreement and Amended and Restated Change in Control Severance Agreement, each dated as of December 1, 2008, between First Solar, Inc. and David Eaglesham	10-K	001-33156	2/22/10	10.28	
10.29	Amended and Restated Employment Agreement dated as of December 1, 2008, between First, Solar Inc. and James Zhu	10-K	001-33156	2/22/10	10.29	
10.30	Amended and Restated Employment Agreement and Amended and Restated Change in Control Severance Agreement, each dated as of December 15, 2008, between First Solar Inc. and Carol Campbell	10-K	001-33156	2/22/10	10.30	
10.31		10-K	001-33156	2/22/10	10.31	

	Employment Agreement and Change in Control Severance Agreement, each dated December 14, 2009, between First Solar, Inc. and T.L. Kallenbach				
10.32	Amendment to Employment Agreement, effective as of July 28, 2009, between First Solar, Inc. and Bruce Sohn	10-K	001-33156	2/22/10	10.32
10.33	Amendment to Employment Agreement, effective as of July 28, 2009, between First Solar, Inc. and Jens Meyerhoff	10-K	001-33156	2/22/10	10.33
10.34	Amendment to Employment Agreement, effective as of July 28, 2009, between First Solar, Inc. and John Carrington	10-K	001-33156	2/22/10	10.34
10.35	Amendment to Employment Agreement, effective as of July 28, 2009, between First Solar, Inc. and Mary Elizabeth Gustafsson	10-K	001-33156	2/22/10	10.35
10.36	Amendment to Employment Agreement, effective as of July 28, 2009, between First Solar, Inc. and Carol Campbell	10-K	001-33156	2/22/10	10.36
10.37	Amendment to Employment Agreement, effective as of November 2, 2009, between First Solar, Inc. and David Eaglesham	10-K	001-33156	2/22/10	10.37
10.38	Amendment to Employment Agreement, effective as of November 2, 2009, between First Solar, Inc. and Carol Campbell	10-K	001-33156	2/22/10	10.38
10.39	Amendment to Employment Agreement, effective as of November 2, 2009, between First Solar, Inc. and James Zhu	10-K	001-33156	2/22/10	10.39

10.40	Amendment to Employment Agreement, effective as of November 16, 2009, between First Solar, Inc. and Mary Elizabeth Gustafsson	10-K	001-33156	2/22/10	10.40
10.41	Amendment to Employment Agreement, effective as of October 1, 2009, between First Solar, Inc. and Michael J. Ahearn	10-K	001-33156	2/22/10	10.41
10.42	Agreement and Plan of Merger dated as of March 2, 2009 by and among First Solar Inc., First Solar Acquisition Corp., OptiSolar Inc. and OptiSolar Holdings LLC	10-Q	001-33156	5/1/09	10.1
10.43	First Solar, Inc. 2010 Omnibus Incentive Compensation Plan	DEF 14A	001-33156	4/20/10	App. A
10.44	First Solar, Inc. Associate Stock Purchase Plan	DEF 14A	001-33156	4/20/10	App. B
10.45	Agreement and Plan of Merger, dated as of April 27, 2010, by and among First Solar, Inc., Jefferson Merger Sub, LLC, NextLight Renewable Power LLC, Energy Capital Partners I, LP, Energy Partners I-A, LP Energy Capital Partners I-B IP, LP, and Energy Capital Partners I (WD IP), LP	8-K	001-33156	4/28/10	2.1
10.46	Amendment to Employment and Non-Solicitation Agreement, effective as of July 1, 2010, between First Solar, Inc. and Jens Meyerhoff	10-K	001-33156	2/28/11	10.46
10.47	Amendment to Employment Agreement, effective as of December 7, 2010, between First Solar, Inc. and James Zhu	10-K	001-33156	2/28/11	10.47
10.48	Employment Agreement, dated October 1, 2010, and Change in Control Severance Agreement, dated October 1, 2009, between First Solar, Inc. and Maja Wessels	10-Q	001-33156	5/5/11	10.1
10.49	Employment Agreement, dated February 22, 2011, between First Solar, Inc. and T.L. Kallenbach	10-Q	001-33156	5/5/11	10.2
10.50	Employment Agreement, dated March 15, 2011, and Change in Control Severance Agreement, dated April 4, 2011 between First Solar, Inc. and Mark Widmar	10-Q	001-33156	5/5/11	10.3
10.51	Amendment to Non-Competition and Non-Solicitation Agreement, dated April 28, 2011, between First Solar, Inc. and Bruce Sohn	10-Q	001-33156	5/5/11	10.4
10.52	Amended and Restated Employment Agreement, effective September 1, 2011, and Change in Control Severance Agreement, dated as of April 7, 2008, between First Solar, Inc. and James G. Brown, Jr., and amended and restated effective December 1, 2008	8-K	001-33156	8/17/11	10.1
10.53	Amendment to Non-Competition and Non-Solicitation Agreement and Mitigation Clause Waiver, effective September 30, 2011,	8-K	001-33156	8/17/11	10.2

	between First Solar, Inc. and Jens Meyerhoff					
10.54	Amendment to Non-Competition and Non-Solicitation Agreement, dated November 15, 2011, between First Solar, Inc. and Robert Gillette	8-K	001-33156	11/21/11	10.1	
10.55	Employment Agreement, by and between First Solar, Inc. and Michael J. Ahearn	8-K	001-33156	12/29/11	10.1	
10.56	Employment Agreement, dated March 14, 2012, and Change in Control Severance Agreement, dated March 19, 2012 between First Solar, Inc. and James Hughes	10-Q	001-33156	5/4/12	10.1	
10.57	Form of Key Senior Talent Equity Performance Program Grant Notice	10-Q	001-33156	5/4/12	10.2	
10.58	Amendment to Employment Agreement, effective as of May 3, 2012, between First Solar, Inc. and James Hughes, and Amendment to Non-Competition and Non-Solicitation Agreement, effective as of May 3, 2012, between First Solar, Inc. and James Hughes.	8-K	001-33156	5/11/12	10.1	
10.59	Employment Agreement, effective July 1, 2012, and Change in Control Severance Agreement, effective July 1, 2012 between First Solar, Inc. and Georges Antoun	10-Q	001-33156	8/3/12	10.1	
14.1	Code of Ethics	10-K	001-33156	3/16/07	14	
21.1	List of Subsidiaries of First Solar, Inc	—	—	—	—	X
23.1	Consent of Independent Registered Public Accounting Firm	—	—	—	—	X

31.01		Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—	X
31.02		Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a), as amended	—	—	—	—	X
32.01	*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes Oxley Act of 2002	—	—	—	—	X
101.INS		XBRL Instance Document	—	—	—	—	X
101.SCH		XBRL Taxonomy Extension Schema Document	—	—	—	—	X
101.DEF		XBRL Definition Linkbase Document	—	—	—	—	X
101.CAL		XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	—	X
101.LAB		XBRL Taxonomy Label Linkbase Document	—	—	—	—	X
101.PRE		XBLR Taxonomy Extension Presentation Document	—	—	—	—	X

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

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