2009 Annual Report

Clean.
Affordable.
Sustainable.

First Solar®

Longuich, Germany (3MW); Phoenix Solar AG

About First Solar

First Solar, Inc. (NASDAQ: FSLR) manufactures photovoltaic (PV) solar modules with an advanced semiconductor technology, and designs and builds utility-scale PV solar systems. Our module manufacturing costs are the lowest in the world due to proprietary technology, high-volume continuous-flow manufacturing, and operational excellence. We measure our long-term financial success by earning a return on net assets targeted to be 5% above our cost of capital. In October of 2009, we were added to the S&P 500® Index.

By enabling clean, renewable electricity at competitive prices, First Solar provides an economically and environmentally viable alternative to peaking fossil-fuel electricity generation. First Solar PV power plants operate with no water, air emissions, or waste stream. First Solar has set the benchmark for environmentally responsible product life cycle management by introducing the industry's first prefunded, comprehensive collection and recycling program for solar modules. From raw material sourcing through end-of-life collection and recycling, First Solar is focused on creating value-driven renewable energy solutions that protect and enhance the environment. For more information about First Solar, please visit www.firstsolar.com.

In 2009, First Solar was added to the S&P 500® as the first pure-play renewable energy company, illustrating our financial viability through profitable growth

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

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

First Solar®

To Our Shareholders:

Rob Gillette
Chief Executive Officer

When I started as CEO of First Solar in October 2009, I knew I would be leading a strong company with a bright future. Guided by former CEO and current Executive Chairman, Mike Ahearn, with a dedicated team of over 4,700 associates, First Solar has become a world leader in PV module manufacturing and utility-scale systems. Yet as we celebrated our 10-year anniversary in 2009, we also experienced a challenging business environment, dealing with industry-wide module over-supply and pricing adjustments, a weak global economy, and a financial climate that affected project financing. Despite these obstacles, we remained steadfast and made progress in advancing our mission to create enduring value by enabling a world powered by clean, affordable solar electricity and delivering on the commitments made to our shareholders.

In 2009, First Solar achieved its financial guidance, delivering solid results. Revenues increased 66% year over year to $2.1 billion, and earnings per share increased 78% to $7.53 per fully diluted share. We produced over 1.1 gigawatts (GW)—double our 2008 total—and our module cost per watt decreased by 19% to $0.84 in the fourth quarter of 2009. We generated free cash flow of $395 million, and grew our cash and marketable securities balance to $1.1 billion. Our operating margin was 32.9% of net sales, contributing to a 25.5% return on net assets, exceeding our goal of 20% and creating significant economic value.

First Solar addressed global demand for PV solar during 2009. In North America, we built 50 megawatts (MW) of utility-scale projects, and in 2009 and early 2010, we signed or acquired 1.7GW (AC) of new contracts. In Europe, we added 361MW of module demand to our long-term agreements, which allow for a total of approximately $3.8 billion in sales from 2010 to 2013. In Asia, we entered the Chinese market with a memorandum of understanding to sell modules for a 2GW solar installation in Ordos City. And the opportunity is growing. Through 2012, the market for PV solar is projected to have a 35% compound annual growth rate, increasing global demand to an expected 12GW. To satisfy this demand, we are constructing 8 new lines at our Kulim, Malaysia manufacturing facility, set to ramp up production in the first half of 2011. As part of a 10-year module supply agreement with EDF Energies Nouvelles, an affiliate of one of the largest utilities in Europe, we announced plans to build a two-line facility in Blanquefort, France. In the first quarter of 2010, we ramped our fourth line at our Perrysburg, Ohio facility. By 2012, First Solar's total manufacturing capacity is expected to increase to 34 lines, equaling 1.8GW per annum based on the fourth quarter 2009 annual line run rate of 53.4MW.

We will continue to focus on our goal of achieving price parity with conventional fossil-fuel based peak electricity generation. To do this, we target cost reductions in module manufacturing, balance of system, and project financing costs. By continuing to improve conversion efficiency, line run rate, material cost, and by driving volume to further decrease overhead costs, we expect to achieve a cost reduction of over 30% in our PV module manufacturing, with the expectation to bring module costs down to $0.52-$0.63 per watt by 2014. By improving conversion efficiency, leveraging volume procurement around standardized hardware platforms, and accelerating installation time, we are striving to cut balance of system costs that include installation hardware and labor—which account for more than half of all capital costs—by about 33% to $0.91-$0.98 per watt by 2014.

In 2010, we will serve the European feed-in tariff (FiT) markets and continue developing new global markets. The European market is expected to grow 30% year over year. Germany remains the largest market with good first-half demand and uncertainty by mid-year due to an anticipated reduction in the FiT. We expect robust growth in France and Italy while demand in Spain gradually recovers. We are planning for strong growth in our North American systems business as we continue to execute against our large pipeline. This market continues to benefit from state Renewable Portfolio Standards, through the U.S. federal stimulus package in the form of the federal Investment Tax Credit cash grant, and Ontario, Canada's Renewable Standard Energy Offer Program (RESOP). All of these programs contribute to increasing utility adoption of solar-generated energy. Finally, China and India are emerging as potentially large markets for which we are establishing approaches.

Our strong balance sheet and cash flow, along with our project finance capabilities, are enabling us to attract investors to many utility-scale projects throughout North America. In 2009, we successfully sold our 80MW Sarnia, Ontario project to Enbridge Inc. and our 21MW Blythe, California project to NRG Energy. Our 30MW project near Cimarron, New Mexico was recently sold to Southern Company. These sales demonstrate our ability to design and build utility scale PV solar projects that generate attractive rates of return.

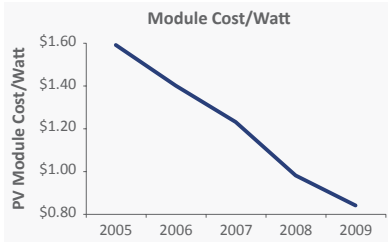
First Solar made significant progress toward our long-term goals in 2009. In 2010, we will continue to execute on our roadmaps, driving financial returns for our shareholders and customers. I wish to extend my thanks and appreciation to all our First Solar associates. It is through their continued dedication and creativity that we look forward to another year of expansion and profitable growth.

Sincerely,

Rob Gillette, Chief Executive Officer

Driving Down Costs, Enhancing Value

As a world leader in PV solar, First Solar understands that the most important goal for the industry is to achieve price parity with conventional fossil-fuel based peak electricity generation, making clean solar power affordable on a broad scale. We expect to reach this goal within the next three to four years through the effective execution of our technology and cost reduction roadmaps while developing markets that are either defined by abundant solar resources, existing high operating energy costs, or economics where solar can be attractive relative to fossil-fuel generated electricity. We remain focused on reducing PV system costs in three areas; modules, balance of system (BoS) components, and project development and financing.



Executing module cost reduction toward price parity requires a roadmap for driving our manufacturing cost from $0.84 per watt in the fourth quarter of 2009, to a range of $0.52-$0.63 per watt in 2014. One important lever for reducing module manufacturing cost per watt is increasing the conversion efficiency of the module itself. Today, our modules convert 11.1% of sunlight into electricity and we are improving this number by continually advancing our technology. We are also driving down module production costs by improving the throughput of our factories, reducing material costs, and optimizing plant scale. Using a proprietary replication process called Copy Smart™, First Solar is able to build and expand new manufacturing facilities in cost-effective locations, such as Kulim, Malaysia, at a rapid pace while ensuring that each factory mirrors the others in product efficiency, reliability, and safety. This approach has enabled First Solar to increase its global module production capacity from 25MW in 2005 to an expected 1.8GW in 2012, allowing us to scale our costs as we grow.

Kulim, Malaysia Manufacturing Plant and Expansion Site

Reducing balance of system component costs—the source of more than half of the costs of a PV project—means that First Solar is continuously optimizing its installation process and reducing the per-watt costs on items such as mounting hardware, wiring, installation labor, and inverters. Our goal is to lower BoS costs to $0.91-$0.98 per watt in 2014, a reduction of about 33%. Our efforts to improve the conversion efficiency of our modules will also contribute to reducing the per-watt cost requirements for installation labor and components. During 2009, we made significant progress as we doubled the velocity of our installation process compared to 2008. Increasing our installation velocity also reduces working capital requirements, ensuring a strong balance sheet.

Lowering project development and finance costs is enabled by this strong balance sheet. For a utility-scale PV solar system, the creditworthiness of the project developer, engineering, procurement, and construction contractor, and module supplier is a key component in establishing the cost of debt. A lower financing cost directly impacts the economic viability of projects and leads to a lower system cost, which in turn contributes to achieving our grid parity goal.

Our ability to build and sell our U.S. utility-scale systems is bolstered by a feature of the 2009 American Recovery and Reinvestment Act which allows the equity owner to receive an immediate cash payment in lieu of the 30% Investment Tax Credit (ITC) that would otherwise be granted as a credit against future tax payments. We have also applied to the Department of Energy (DOE) under its loan guarantee program to help reduce the financing costs of upcoming PV projects like our 550MW Desert Sunlight solar plant, located in California's Chuckwalla Valley. This project is expected to begin construction in late 2010. We believe the ITC cash grant and DOE loan guarantee program will be effective in assisting project financing in the near term, however their respective 2010 and 2011 expirations limit the projects that can qualify. First Solar has recommended that these programs be extended.

Installation Velocity

By applying replication techniques to the process of installing solar modules, we doubled our installation velocity from 2008 to 2009, resulting in lower BoS costs per watt.

Blythe, California, USA 21MW
September 11th

October 23rd

November 27th,
finished in about 13 weeks

Growing in European FiT Markets and Expanding into Developing Markets

The market for PV solar is projected to grow at a 35% compound average rate through 2012, increasing annual demand to over 12GW worldwide. We expect the 2010 market to climb to 7.5GW of installations. We will serve the European FiT markets and continue developing new global markets like North America, China, India, and Australia.

Europe

The European market remains promising for First Solar, driven over the next three to five years by the European Union's 20% by 2020 renewables mandate. In 2009, the German market grew strongly to about 3GW and continued to be the industry's largest as our partners built commercial rooftop and ground-mount systems. The German Lieberose Solar Park, a 53MW project built on conversion land, is a model for future solar development. The Italian market is expected to be the second largest in Europe in 2010, and several of our partners are actively developing projects there. A recent example is juwi Solar with a 1MW rooftop installation on the Bentegodi stadium in Verona, Italy. France recently enhanced their FiT, and their market is expected to be the third-largest in Europe in 2010. EDF Energies Nouvelles anticipates significantly increasing business in France. They are constructing the 76MW Gabardan project in Losse, southwestern France using First Solar modules. Building on this partnership, we now have a 10-year module supply agreement with them for French projects, with plans to build a two-line facility in Blanquefort, France.

North America

In North America, First Solar's 2009 purchase of the Optisolar project development pipeline has yielded the upcoming 550MW Desert Sunlight project for both Pacific Gas & Electric (PG&E) and Southern California Edison (SCE), the 550MW Topaz project for PG&E, and the 300MW Stateline project for SCE. In total, we added 1.7GW of power purchase agreements and RESOP agreements in North America in 2009 and in early 2010. First Solar accounts for approximately 16% of the announced 8.6GW of U.S. utility-scale solar PV and concentrated solar projects. We expect to remain strong in these markets by continuing to offer the fastest lead time to generation and to Renewable Portfolio Standard compliance. In addition, we are currently expanding sites built for customers in 2009. For instance, the 10MW El Dorado site in Boulder City, Nevada, built for Sempra, is being expanded by 48MW, and the 20MW Sarnia, Ontario project is being increased by 60MW for Enbridge.

Asia/Pacific

In China, First Solar signed a memorandum of understanding for a multi-phase, 2GW solar power plant to be built near Ordos City in Inner Mongolia. In Australia, we are participating in over 500MW of opportunities on rooftop, ground-mount, and off-grid applications.

North American Projects

Europe

In 2009, the 53MW (DC) Lieberose Solar Park was completed in Germany in collaboration with juwi Solar. Sited on a former military training ground, the creation of this project prompted the removal of tons of munitions waste.

In Italy, juwi Solar's 1MW (DC) rooftop project on the Bentegodi Stadium in Verona is generating about one million kilowatt-hours of emission-free electricity per year using over 13,000 First Solar modules.

North America

The first 20MW (AC) of an 80MW (AC) project in Sarnia, Ontario, Canada was built for Ontario Power Authority and was sold to Enbridge Inc.

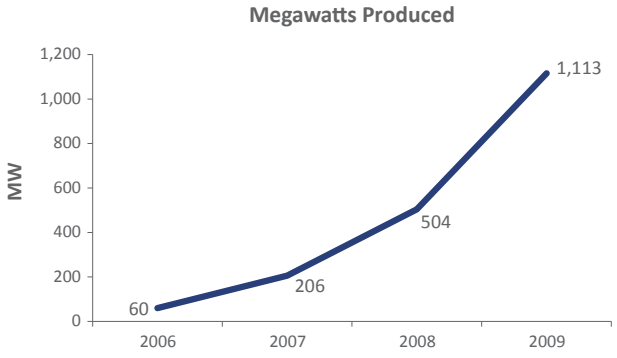
Asia

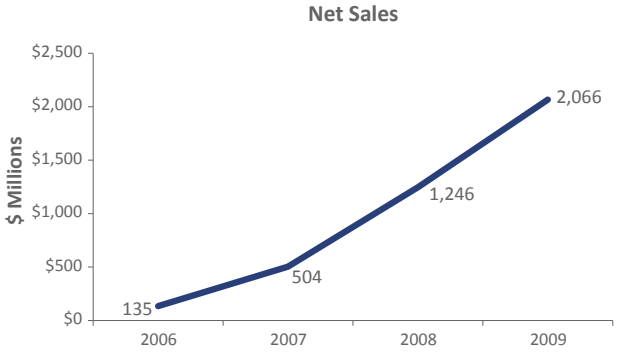
Site of the 2GW (AC) solar power plant to be built in Ordos City, China.

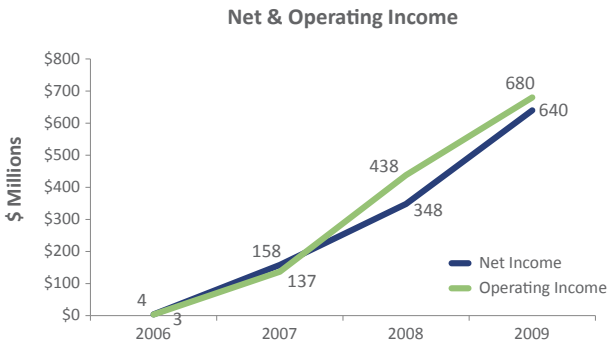
Delivering Solid Financials

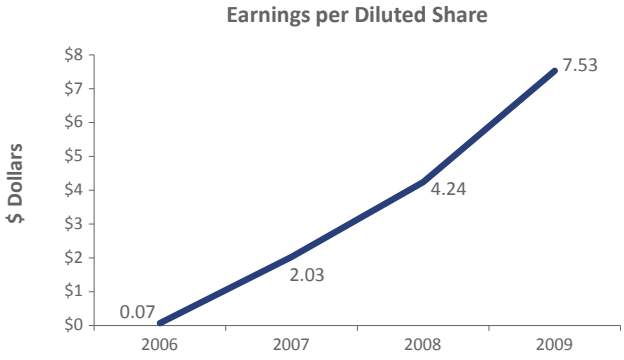
First Solar delivered strong financial results during 2009, despite a difficult economic and market environment. We grew sales and doubled our market share, increasing our earnings per share by 78% to $7.53 per fully diluted share, while delivering a 25.5% return on net assets, exceeding our cost of capital. Operating and free cash flows were $675 million and $395 million, respectively. In 2009, First Solar was added to the S&P 500® as the first pure-play renewable energy company.

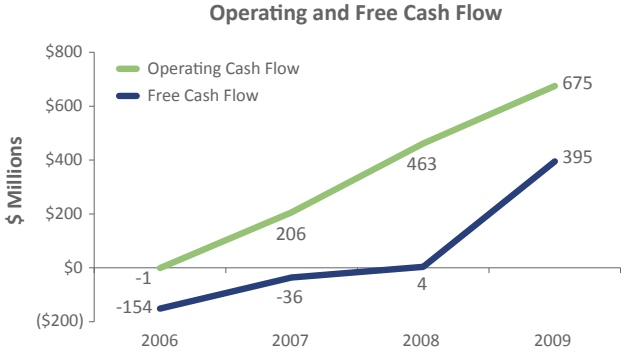
First Solar's strong balance sheet and financial performance give us a distinct competitive advantage. Customers and project investors view us as a stable partner that can build, operate, and warranty multi-billion dollar projects over multiple years. We meet or exceed all quantitative criteria for an investment-grade credit rating, enabling us to attract low-cost financing for both capacity expansion and project development.

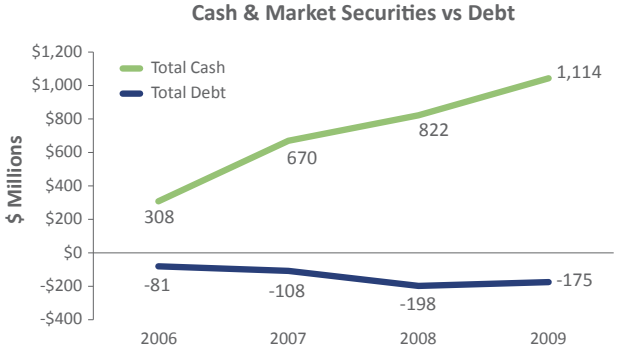












Corporate Information

Executive Management

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

Board of Directors

Michael J. Ahearn, Executive Chairman
Robert J. Gillette, Chief Executive Officer
Craig Kennedy, Director
James F. Nolan, Director
J. Thomas Presby, Director
Paul H. Stebbins, Director
Michael Sweeney, Director
José H. Villarreal, Director

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Independent Auditors

PricewaterhouseCoopers LLP

Annual Meeting

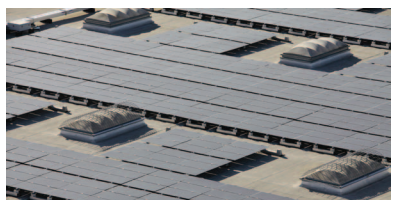
Desert Willow Conference Center
4340 East Cotton Center Boulevard
Phoenix, AZ 85040
June 1, 2010 – 9:00 a.m. local time

Stock Listing

First Solar, Inc. common stock is traded on the Nasdaq Global Select Market, listed under FSLR.

Photo Credits

Front and back cover, clockwise from top: Hasborn, Germany (5.6MW); Phoenix Solar AG Hassleben, Germany (5.8MW); COLEXON Energy AG Blythe, California, USA (21MW); First Solar Verona, Italy (1MW); juwi Solar GmbH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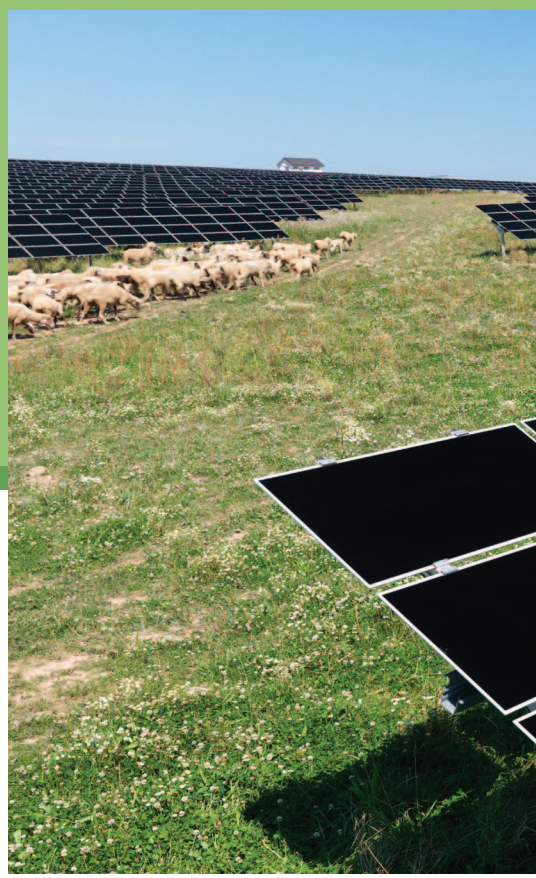

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