

STATEMENT OF  
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FIRST SOLAR  
BEFORE THE  
U.S. SENATE  
COMMITTEE OF ENVIRONMENT AND PUBLIC WORKS  
AND  
SUBCOMMITTEE ON GREEN JOBS AND THE NEW ECONOMY  
JANUARY 28, 2010  
JOINT HEARING:  
SOLAR ENERGY TECHNOLOGY AND CLEAN ENERGY JOBS

Chairman Boxer, Ranking Member Inhofe and members of the committee, thank you for the opportunity to discuss the potential to improve our environment and create jobs by expanding the use of clean, affordable solar energy.

### **First Solar Background**

I am Rob Gillette, CEO of First Solar. First Solar is the world's largest photovoltaic (PV) solar module manufacturer. Our firm is North America's largest PV solar power plant developer, and the low cost PV manufacturer. Our mission to enable clean, affordable solar electricity is supported by a sustainable business strategy that leverages advanced technology and economies of scale to lower costs.

First Solar welcomes the opportunity to address the topic of today's hearing -- Solar Energy Technology and Clean Energy Jobs. Our advanced technology thin film modules are the cornerstone for the rapid manufacturing scale-up, progress toward grid parity, and job creation that we have experienced. However, stable, long-term government policies accelerated our journey. Today, First Solar is a Fortune 500 company with expected 2009 revenues totaling approximately \$2 billion.

Between 2005 and 2009, we scaled our annual solar module production from 20 megawatts to over 1,100 megawatts -- an increase of more than 50 times. During the same period, we increased employment to more than 4,500 people and invested over \$1 billion in equipment and research. The ability to scale the business enabled a 70 percent cost reduction in our modules. For high irradiance solar projects, the installed cost is on a pathway toward grid parity with a US installed cost between \$0.12 and \$0.15 per kilowatt-hour, including federal incentives.

Our associates take great pride in their work and the knowledge that based on 2009 capacity, First Solar's modules can generate enough electricity to power 160,000 houses and simultaneously avoids emissions of 30 million tons of CO<sub>2</sub> over the 25-year life of the modules.

Plans to increase our global solar module manufacturing capacity from 1,100 megawatts to 1,800 megawatts were announced earlier this year.

### **Market Growth Enables Jobs and Cost Reduction**

The critical component of First Solar's success has been our game-changing thin-film technology, developed in the United States. Today, our growing Ohio operations directly employ over 1,000 associates and remain a nucleus for research and technology innovation. In a state with over 10 percent unemployment, our operations continue to expand and offer high-tech jobs. Our cutting edge research has attracted dozens of PhDs who live and work in the greater Toledo area. Equally important is that our Perrysburg facility employs many former auto workers who possess manufacturing skills that are both specialized and transferable to solar manufacturing.

The cornerstone of our technology adoption and cost reduction success is due to growing and reliable solar markets overseas. In 2009, over 90% of our global production was sold outside of the United States. These markets have provided us the opportunity to scale and reduce costs, thus enabling an accelerated cycle of improvement that benefits the environment, local economies and the cost competitiveness of solar electricity.

It should come as no surprise that, although we expanded our Ohio plant last year, most of our plants are built outside of the United States. As a growing number of countries combine carbon emission reduction goals with renewable energy policy, the proximity to markets and low cost manufacturing will drive investments and manufacturing overseas unless policies here help drive market growth; it is that simple.

Germany remains an excellent example of how forward looking policy increased renewable energy use and created green jobs. Renewable energy consumption in Germany increased from 4% to 15% as a result of a renewable energy feed-in tariff that created growing, transparent, and predictable renewable markets. The German government reports that over 280,000 renewable energy jobs have been created since the feed-in-tariff was adopted and 53 billion tons of CO<sub>2</sub>

emissions have been avoided. This success has driven the adoption of similar support programs across most European countries and ongoing consideration of such programs in China and India.

US solar resources are many times larger than those in Germany or other solar markets of significance. However, despite the enormous potential for solar leadership, the United States accounts for less than one percent of global sales. Without a growing and predictable domestic market, the United States risks losing the global race for solar technology and associated green jobs and could be relegated to an importer of products developed and manufactured in other countries.

## **US Policy Initiatives**

The good news is that it is early in the industry's development path, and the outcome can still be influenced. In order for the United States to establish a leadership role, First Solar recommends four actions to extend programs that are beginning to make a difference in today's marketplace and to position the US for mid and longer-term growth.

### **1. Extend Expiring Treasury Grant Program**

One of the solar industry's most significant constraints is efficient access to capital. The 2009 American Recovery and Reinvestment Act included a grant in lieu of the investment tax credit for solar generation, which could have a very positive impact on the US solar market and related US job creation.

The Section 1603 Treasury Grant Program provides direct payments to energy producers in place of tax credits. This was done to help compensate for the dwindling tax equity market and to provide a cash incentive at a time when the solar industry as a whole was not profitable.

A defining feature of the Treasury Grant Program is that it vastly expands the pool of investors who are attracted to the stable, long-term return on investment that a utility-scale solar power

plant generates. The Grant Program also benefits the debt-side of solar financing by lowering the cost of debt at a time when financing continues to be tight.

First Solar joins others in our industry, small and large, to extend our thanks to Congress for establishing this program. However, the grant program will expire at the end of this year, just as it is critically needed to bring projects on line and attract investors for new development projects. It is vital that the grant program be extended though December 31, 2012 in the upcoming Jobs Bill. First Solar is also supportive of Senator Feinstein's legislation, the Renewable Energy Incentive Act, to extend and expand the Section 1603 grant program.

## **2. Extend and Streamline the Department of Energy Loan Guarantee Program**

Approximately 85 percent of the power price received from a large-scale solar power plant goes to repay the capital invested to build the project. Even though we are the leading solar power plant developer in the US, with over 1,500 megawatts of projects in development, First Solar has only one project that can meet the deadline for this program. Due to the 2011 sunset date, permitting redundancy, and complexity of the program, we anticipate having to seek private sector loans for the other projects in our portfolio. The result is more expensive financing and higher-cost solar electricity.

The Department of Energy loan guarantee program can play a key role in supporting industry growth by reducing financing costs and fostering the development of robust private capital markets to finance large solar projects.

It is critical that:

- the program's lifespan be extended to 2016, making it coterminous with the investment tax credit, and synchronized to the long development timelines of the projects it is intended to support, and

- environmental permitting requirements and timelines are harmonized between state and federal oversight agencies.

### **3. Federal/State solar incentives**

As I mentioned earlier, the solar industry's development and cost reductions to date have resulted primarily from feed-in-tariff programs in countries such as Germany. I encourage you to consider the creation of joint Federal/State incentive program that would promote the development of solar markets in geographies that have strong solar resources. The outcome would be the installation of multiple gigawatts of solar energy, the creation of hundreds of thousands of jobs, solar electricity costs near grid parity, and a significant reduction in CO2 emissions.

### **4. Address Issues of Land Use and Grid Transmission for Solar Inclusion**

I want to thank Secretary Salazar for his work in improving the regulatory processes to deploy solar on federal lands with greater speed, certainty and transparency without compromising the stewardship of our nation's precious resources. Based on First Solar's experience, we believe the MOU between the Department of the Interior and the State of California has fostered a sense of collaboration and commitment around advancing large-scale projects.

As renewable energy grows, transmission becomes a serious constraint that must be addressed. The rules governing transmission siting and interconnection were designed decades ago and urgently need updating to accommodate the inclusion of renewable generation.

### **Conclusion**

First Solar believes that a strong US solar industry is critical to our energy security and economic recovery. In fact, we know that solar energy creates more jobs per megawatt of energy than any other form of energy: renewable or fossil. The federal government should provide transitional

incentives of sufficient duration and impact to ensure that those jobs are created in the United States.

We encourage Congress to act now to extend vital programs scheduled to expire and to remain committed to longer-term programs necessary to attract the global capital and investment required to sustain a growing renewable energy sector.

We look forward to working with Congress in crafting solutions to create jobs and reestablish America's leadership in solar manufacturing and deployment.