**Testimony of**

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**Before the**

# US Senate Committee on Environment and Public Works and the US Senate Subcommittee on Green Jobs

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Madam Chairwoman Boxer and distinguished members of the Environmental Public Works Committee and the Green Jobs Subcommittee,

I am proud to appear before you today to address the important role a robust and growing solar energy industry can play in driving our economy and providing quality green jobs for a growing number of Americans. My name is Robert Rogan. I am the senior vice president of American markets at eSolar, a Pasadena-based concentrating solar thermal (CSP) company.

**I. Introduction**

As way of introduction, allow me to provide some brief background on eSolar. Our company was founded in 2007 with the ambitious goal of creating a technology to provide clean, affordable renewable energy for less than the cost of fossil fuels. eSolar's technology was developed in California, and today we have almost 130 employees in the Los Angeles Area. Despite the fact that we are less than three years old, eSolar opened its first commercial scale, fully functioning power plant, the Sierra SunTower facility, in Lancaster, CA in the summer of 2009. Sierra SunTower is the only operating solar thermal power tower facility in the United States today. Twenty-one people are employed full time by the Sierra facility.

Our technology of choice for generating clean energy is concentrating solar power (CSP). This is quite different from the photovoltaic (PV) technologies used by my colleagues from First Solar and groSolar. In simple terms, CSP harvests the heat of the sun to boil water, create steam, and turn traditional turbines. CSP is generally used solely in utility-scale applications. Generally, there is room for both PV and CSP in the market since each has its own ideal applications in terms of size and geography.

There are numerous ways to concentrate the sun's energy. eSolar uses tens of thousands of small mirrors to focus the sun's light on towers on which heat receivers are mounted. eSolar's engineers developed state of the art software and advanced algorithms to achieve the highest level of mirror accuracy in the industry. We use standardized hardware components that reduce costs and increase scalability. Our technology distinguishes itself from other CSP companies by being extremely modular and flexible in application. Our plants can be deployed in increments of 46 megawatts, which is the smallest commercially viable CSP plant available today. Because our solar thermal technology is primarily made of steel and glass, and requires no special materials, eSolar has the ability to scale up deployments rapidly, and delivery many GW of power plants over the next few years.

In the last 12 months, eSolar has announced a 3,500 MW global pipeline of orders for our equipment, with projects sited in the United States, China, and India. This is the equivalent of approximately three large nuclear facilities, and positions eSolar as one of the market leaders in solar thermal energy.

Approximately 500 MW of these contracts are for projects located within the U.S. We are currently developing our first U.S. project in southern New Mexico with our partner, NRG Energy Inc., which has applied for a DOE loan guarantee. The project is being built on private land and has progressed very far through the permitting process. If the DOE loan guarantee process is completed, the project can break ground in 2010, and thus could become the first solar thermal facility to be built using funds from the DOE loan guarantee program.

In my testimony today, I plan to address several key points:

1. First, I would like to highlight the success our projects have had in creating jobs and driving local economic development in California and New Mexico.

2. Second, I will address the important role the solar energy industry will play in the United States' economic recovery and the large contribution the industry will make in terms of job creation.

3. Finally, I will discuss the role of the federal policy in expanding the solar energy industry, outlining the necessary steps that need to be taken in order for solar energy companies such as eSolar to deliver on their promise of clean energy and good jobs for years to come.

## II. eSolar Projects Provide Good American Jobs

As mentioned above, last summer eSolar launched its first commercial-scale solar facility, a 5-megawatt power plant in Lancaster, California in the heart of the Antelope Valley region. The project created more than 300 jobs at the peak of construction. It now permanently employs 21 people. eSolar received accolades from Gov. Schwarzenegger and the Lancaster Mayor and for our innovative solar technology and for our ability rapidly develop a new industry in a town yearning for economic opportunity.

eSolar's technology builds on concepts first pioneered at Sandia National Laboratories in the late 1970s. We are able to produce more power on less land, and by building our plants in modular pieces, we can site our plants on previously disturbed land or brownfields, mitigating environmental concerns.

Our plants are built from US and international components They assemble quickly, can be located close to points of consumption, can tap into existing lower voltage

transmission lines, and stand to make a major contribution to the United States' electric generating capacity.

The permitting process is already underway on our next facility, a 92-megawatt plant proposed for the southeastern corner of New Mexico, and the economic impact of this project promises to be even greater than our first project. NRG Energy is developing the project on more than 440 acres in Dona Ana County, and will sell the power produced under a 20-year power purchase agreement already approved by the New Mexico Public Regulation Commission to El Paso Electric.

When the project was announced, Gov. Bill Richardson hailed the project for bringing a new renewable energy technology to New Mexico and for helping El Paso Electric to meet the state's recently enacted renewable portfolio standard.

The facility will produce the most electricity when temperatures rise and demand is at its peak, delivering 193 million kilowatt hours per year to the grid, enough to power about 74,000 homes at peak production. It will reduce annual greenhouse gas emissions by about 153,000 tons as compared to a fossil-fueled plant, according to the EPA.

In addition to these environmental benefits, the facility will have a tremendous benefit on the local economy. It will generate nearly $23 million in economic benefits from development, construction and operation to the local community and the state, and will create hundreds of jobs throughout the construction process and more than 20 full-time, permanent positions.

Projects such as Sierra SunTower and New Mexico SunTower are essential to the recovery of the American economy, and are critical to establishing the United States as the global stand-alone renewable energy leader.

## III. The U.S. Solar Industry Has an Enormous Potential for Job Creation

According to the Solar Energy Industries Association (SEIA), today there are more than 431 MW of CSP power generation facilities in operation in the US. However, 354 MW of that capacity was deployed between 1984 and 1990.
There are currently over 10 GW (10,084 MW) of projects under development. These projects have the potential to generate literally tens of thousands of jobs. These are good paying jobs in engineering, construction, operations, and maintenance of the power plants.

It is important to understand that for every project that eSolar puts into the ground; there are ripple effects across job markets across the United States. In California, we currently have almost 130 corporate employees, and last year we paid over $1 Million dollars in payroll taxes. For our New Mexico project, almost 1,500 shipping containers worth of parts and materials will be delivered to the site, aiding the recovery of the trucking and shipping industries across multiple states in the Southwest

Because eSolar relies on a large variety of both domestic and foreign vendors for its technology, our projects also produce high quality jobs in the supply chain. As one example, the mirrors for the New Mexico project are manufactured in Naugatuck, CT, and our vendor will need to hire 10 more people at the plant to support our order. When counting the materials and processes needed to feed their glass factory, the vendor estimates they needs to hire another 10 people in the states of Pennsylvania, New York, Michigan, and Texas.

Solar energy development benefits the nation, not just the Southwest U.S. In total, the Solar Energy Industries Association projects the American solar industry in general will generate 882,000 related jobs by 2020. These jobs include research and development, engineering, construction, operations, installations, and many others.

## IV. Policy Recommendations – Promoting a Clean Energy Economy

Like many young and growing industries, the American solar energy industry requires sensible federal policy and support to ensure its success and stability in the future.

In particular, I would like to draw your attention to a number of specific policy initiatives whose extension or introduction would be of great benefit to the industry, ensuring its growth and continued potential to provide needed green jobs for tens of thousands of Americans.

1. Extension of the Investment Tax Rebates – The introduction of the Investment Tax Rebate in 2008 proved to be a fantastic boon for the American solar industry. This policy should be extended to at least 2016 to provide much needed support to solar developers and financiers that do not have adequate tax appetite to take full advantage of the Investment Tax Credit. The recent financial crisis has dramatically reduced the availability of project investors with the required tax appetite to build solar projects and, without extending the Investment Tax Rebate, many solar projects will fail at the financing stage.

2. DOE Loan Guarantees – eSolar is incredibly grateful to Congress, the Obama administration and the hard-working people at the Department of Energy for providing this access to low-cost capital for a variety of projects. We ask you to encourage the administration to expedite its selection process so our industry may begin developing more projects and creating more jobs right away. Additionally, I strongly encourage the Senate to adopt the House's position on H.R. 2847, which will allow for multiple DOE loan applications for a single technology. Currently, our development partner NRG can only access DOE loans for our New Mexico project, but cannot use DOE loan guarantees

for either of our two California projects. This restriction stymies the progress of thousands of MW of renewable energy projects across the country. HR 2847 also importantly restores the $2 billion in funding for the program that was previously removed to pay for the "cash for clunkers" program.

The creation of a Clean Energy Deployment Administration (CEDA) is the next important step in the evolution of the loan guarantee program. Whether part of a comprehensive climate bill, an energy bill, or a jobs bill, CEDA would give DOE additional tools and flexibility to spur deployment of important technologies such as eSolar's.

3. National RPS – eSolar joins SEIA in supporting a national Renewable Portfolio Standard that is designed to encourage the growth of all forms of renewable energy, including all solar applications (utility-scale, distributed and solar hot water).

4. Streamlined Environmental Permitting – Almost every solar project developer, especially CSP providers, have encountered significant obstacles in the environmental permitting process for both private and federal public lands. We ask for your support in streaming the environmental permitting processes to ensure these solar facilities are built on reasonable timelines. Without streamlined permitting, the realization of the green job benefits of renewable energy is severely hampered.

5. Transmission Network Plan – Due to the nature of the solar resource itself, solar projects are most economically feasible when constructed in sunny locations, often far from population centers. These sites often do not have existing transmission. A coherent national transmission network plan including expedited permitting for new transmission lines that carry renewable energy would assist greatly in getting these projects developed and online.

## V. Conclusion

The United States has been the leader in every major industrial and market innovation over the last 200 years. In order to continue our position of leadership in the global economy, we must also be leaders in the global clean energy revolution. eSolar is but one of hundreds of companies vying to help our nation lead the world into a new age of clean energy and economic prosperity. I wish to thank the committee once again for inviting us to present our unique perspective as a representative of the concentrating solar power community.


**Figure 1:** Sierra SunTower Solar Generating Station in Lancaster, California


**Figure 2:** Solar thermal salute at Sierra SunTower, July 2009