

# Solar Technical Assistance Programs for SAI Market Transformation

Vipin Gupta and Charlie Hanley

Sandia National Laboratories, Albuquerque, New Mexico, vpgupta@sandia.gov, cjhanle@sandia.gov

## ABSTRACT

The launch of DOE's Solar America Initiative signifies a substantial change not only for the development of new, cost-competitive solar technologies, but also for the process of introducing these infant technologies into the marketplace. Taking the expertise and field experience at Sandia and NREL, our multi-lab group has developed solar technical assistance packages and teams to help private consumers, utilities, and city governments over the next five years to adopt TPP-developed solar technologies that have the potential to be cost-competitive with fossil fuels and ready for demonstration, acceptance testing, and independent performance evaluation. This technology acceptance work plays a key role in acclimating various market segments to new technologies that hold more promise in achieving DOE cost goals for solar technologies.

## 1. Project History

NREL, Sandia, and its partnering universities (e.g., the Residential Experiment Stations) have over two decades of field experience with solar technologies for domestic and international applications. This experience has provided invaluable insight into what solar technologies and systems need to be adopted by a diverse and sometimes fickle marketplace. The multi-institutional technical staff from these past activities will now be directed to the new SAI effort of Market Transformation.



Fig. 1. NREL's Bob Hansen pauses after completing work on a unique, PV powered oil pumping station and data acquisition system at the Rocky Mountain Oilfield Testing Center.

## 2. Objectives

The principal objective of the DOE Solar America Initiative is to achieve cost-competitiveness of solar energy technologies by 2015 across all market sectors. In the context of this objective, the SAI Market Transformation activities have the objective of reducing market barriers (e.g., misunderstanding of new solar technology, regulatory barriers, poor consumer confidence, lack of trained installers, costly transactions, etc.) and enabling the adoption of TPP-developed solar technologies by the marketplace.

## 3. Technical Approach

To achieve the enumerated objectives and gain market acceptance of the latest solar technologies, SAI is taking a two-pronged approach: infrastructure development and market transformation. Infrastructure development entails the provision of technical, regulatory, institutional, financial, and educational solutions to identified barriers to acceptance of solar technologies. Market transformation is the acceleration of demand for more cost-competitive solar technologies through technology assistance.



Fig. 2. In 2006, Sandia helped the solar industry obtain SRCC certification for a roof-integrated solar hot water system.

#### 4. Results and Accomplishments

Per a 2005 request from DOE SETP HQ, our multi-institutional team developed a strategic plan for international solar activities.

One month after our international strategic plan was completed, President Bush announced in his 2006 State of the Union address his advanced energy initiatives, including DOE's new Solar America Initiative (SAI). Within a couple of months, our multi-institutional team worked hand-in-hand with new staff at the DOE Solar Program to define and detail the planned SAI Market Transformation — activities to reduce market barriers and transform the market (focused on the U.S. market) for wider use of solar energy technologies. This work included our team's participation in multiple Technical Exchange Meetings to solicit and garner input from U.S. industry, consumers, and state and local government officials on these new activities. All of this input—including relevant elements of the recently published international strategic plan—were then incorporated by DOE into a wider Technology Acceptance plan. This became our new guide for future activities, and the plan was used as the substantive basis for the first, second, and ongoing third round of funding opportunity announcements in Technology Acceptance.

#### 5. Conclusions

SAI represents a change from DOE's past international activities to present and future activities focused on markets and applications that can result in wider utilization of solar technologies in the United States. This transformation is well under way and consists of the following activities:

- Review and selection of winning Federal Opportunity Announcement proposals for Solar America Showcases, City Strategic Partnerships, Code and Standards, and State and Utility.
- Organization and formation of tiger teams for provision of technology assistance and sharing of solar knowledge gleaned from the field among the DOE solar R&D community.
- Development of specific ways to overcome identified market barriers (e.g., lack of consumer confidence, inadequate training, poor technology performance, regulatory obstacles, and high cost).
- Continuation of support for U.S. participation in IEA Task 10, "Urban Scale PV Applications," and IEA Task 1, "Exchange and Dissemination of Information on Photovoltaic Power Systems."

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#### MAJOR FY 2006/2007 PUBLICATIONS

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