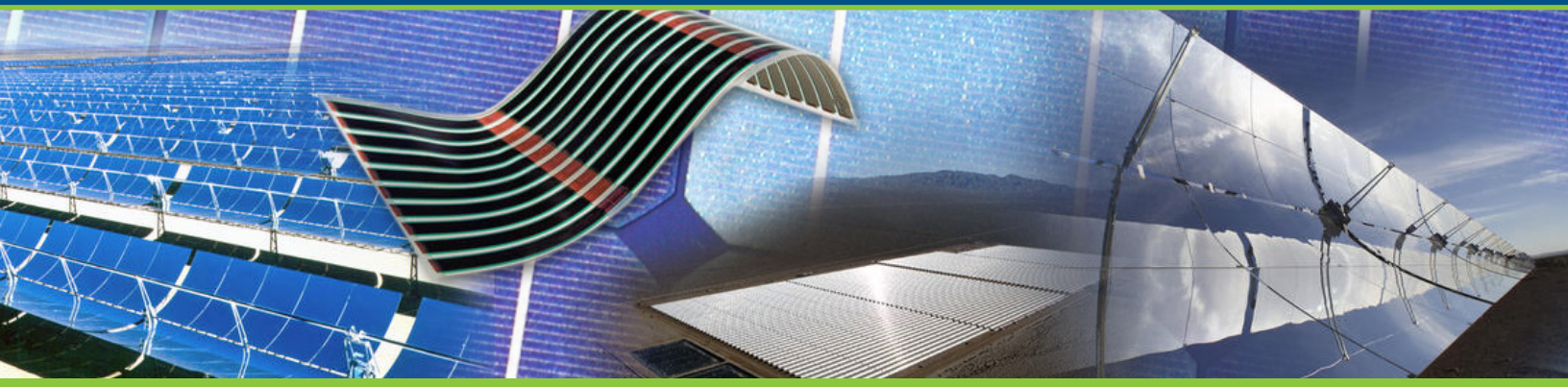


SOLAR ENERGY TECHNOLOGIES PROGRAM NEWSLETTER

JULY 2008

Program Notes

DOE Taps Industry for New Solar Program Manager

We are pleased to announce the arrival of John Lushetsky as the new Program Manager of the Solar Energy Technologies Program (SETP or Solar Program). John joined the U.S. Department of Energy (DOE) on June 9. He has over 20 years of experience in technology development and commercialization, and will be responsible for overseeing all solar technology development, integration, and market transformation activities for the Solar Program. John was previously with Corning, Inc., where he held a number of positions in strategic marketing and business development. Most recently, he was responsible for identifying and developing new strategic business opportunities in photovoltaic and solar thermal technologies. Prior to Corning, he was with Electrosource, Inc., a Texas-based start-up developing an advanced battery technology for electric and hybrid vehicles. John holds an MBA in International Business from George Washington University and an M.S. and B.S. with High Honors in Engineering Science from the University of Florida. We look forward to advancing the innovative work of the Solar Program and our partners under his leadership. Please join us in welcoming John to the Program!

The Solar Program is enormously grateful to Tom Kimbis for his leadership and hard work over the past 6 months as Acting Program Manager. Tom will resume his position as Market Transformation lead for the Solar Program, where he will continue to lead efforts to remove solar market barriers and increase solar's share of the energy market.

U.S. Department of Energy
Energy Efficiency and Renewable Energy

Program Notes

Industry Update

Market Transformation

Letter from the Program Manager

It is great to be here at DOE as the Solar Program Manager and I am excited to be joining a very strong team at a time of incredible growth and change in the solar industry. I realize that many of you have spent your whole careers working in this field. As you can see by my background, I'm not new to solar and also bring a private industry perspective in technology development and commercialization. DOE has a unique leadership role to play in accelerating the adoption of solar technologies by working closely with a number of stakeholders including the national labs, universities, state and municipal agencies, utilities, interest groups, private industry, and the financial community. I look forward to working closely with all of you to realize solar energy's potential in addressing our country's energy challenges.

Best,

DOE Solar Five-Year Program Plan Released

In April, the U.S. Department of Energy's Solar Energy Technologies Program released its 2008–2012 Multi-Year Program Plan (MYPP). The Solar Program is responsible for carrying out the federal role in researching, developing, demonstrating and, to an extent, deploying solar energy technologies. The MYPP presents a look inside the Solar Program's plans and emphases for the next 5 years.

The Solar Program is driven by the Solar America Initiative (SAI), a Presidential initiative launched in 2007 with the goal of achieving grid parity for electricity produced by photovoltaic (PV) systems across the nation by 2015—making the SAI a 9-year effort. The MYPP covers years two through six of the SAI, which can be considered the core of the initiative. The activities covered within the MYPP are the major efforts the Solar Program will undertake to reach the SAI goal.

During the first year of the SAI, the Solar Program laid the initial foundation for success through aggressive collaborative research and development (R&D) efforts with private industry and national laboratories, and expanded that effort to universities in early 2008. Simultaneously, the program launched a groundbreaking market transformation effort through partnerships with cities, companies, non-profits, and universities. The goal is to help commercialize solar technologies by targeting and eliminating market barriers to solar energy, as well as by promoting deployment opportunities. The 2008–2012 activities detailed in the MYPP build off of these early successes of the SAI. The document can be downloaded at www.eere.energy.gov/solar/pdfs/solar_program_mypp_2008-2012.pdf.

Solar Array to be Installed at DOE Headquarters

The U.S. Department of Energy (DOE), in partnership with the General Services Administration, is in the initial stages of implementing a roof-top photovoltaic (PV) system for the DOE headquarters Forrestal Building, located at 1000 Independence Ave., SW, in Washington, DC. Once complete, this 205-kilowatt system will generate about 200 megawatt-hours of electricity each year. The PV modules will be integrated into the existing roof system and will be accessible through a viewing platform. A kiosk showing system output will also be installed in the Forrestal Building lobby. The system is expected to be operational by the end of summer.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

Solar Program Office Moves to 950 L'Enfant

In April, the Solar Energy Technologies Program moved offices from the Forrestal Building (DOE Headquarters) to 950 L'Enfant Plaza in Washington, DC, just a block away.

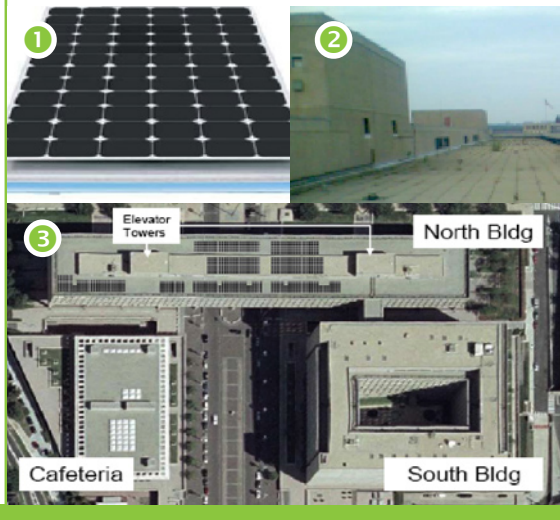
Solar Energy Technologies Program Annual Review Meeting Held in Austin

The Department of Energy's Solar Energy Technologies Program (SETP) held a closed, internal program review in Austin, TX, on April 22–23. The review was designed around three overarching themes—to have DOE partners present the status of their projects, to receive input from industry stakeholders on R&D priorities, and to increase collaboration among national laboratories, universities, and industry. SETP was honored to have Austin Mayor Will Wynn welcome DOE and all of the review participants to Austin.

The break-out sessions were split into the two technology areas of photovoltaics and concentrating solar power, and also included discussion of grid integration and market transformation activities. Sessions within each track were divided according to the various activities within the SETP portfolio. The diversity of sessions was mirrored by the range of participants, who spanned the gamut of the solar energy sector.

After the review's close, DOE and the national laboratories met to discuss SETP's strengths, challenges, and opportunities in the evolving solar energy sector. Results from these discussions will be used to best position the Program to meet its goals.

Solar panel tiles (1) will be interlocked into the existing roof paver tiles (2) on DOE Headquarters' north building.(3)



New Solar Grid and Energy Storage Program Launched

The Renewable Systems Interconnection (RSI) study early this year resulted in the publication of 14 reports, available at www.eere.energy.gov/solar/solar_america/rsi.html, that discuss the technical and analytical challenges that must be addressed to enable high penetration levels of distributed solar, wind, and other renewable energy technologies that are grid-connected. The industry-led Solar Energy Grid Integration Systems (SEGIS) program grew out of this effort. In May, the Solar Program published a concept paper describing how energy storage in residential and small commercial (<100 kW) applications may augment the SEGIS program, and the SEGIS-Energy Storage (SEGIS-ES) program was created.

In communities with high penetration of grid-tied PV systems, energy storage is an essential component of integrated systems. SEGIS-ES will address issues involving peak shaving, load shifting, demand response, outage protection, grid power-quality control, and microgrid issues to maximize PV systems' operational and environmental benefits. To meet the needs of all stakeholders, the SEGIS-ES program will conduct comprehensive systems analysis and modeling, support an industry-led R&D effort focused on commercializing new integrated systems, and develop appropriate codes and standards that facilitate broader market penetration.

Electric energy storage is already a well-established market, and SEGIS-ES will work to optimize components and systems for grid-tied PV applications. Effective integrated storage systems can reduce customers' utility bills, provide outage protection, and protect equipment on the load side from the negative effects of voltage fluctuations on the grid.

DOE to Invest up to $60 Million for Advanced CSP

On April 30, DOE announced a funding opportunity for up to $60 million over 3-4 years to support the development of low-cost concentrating solar power (CSP) technology. The funding includes $10 million in FY 2008 appropriations and $10 million in the FY 2009 budget request. Specifically, the funding is available for projects from industry and academia that develop advanced thermal storage concepts and heat transfer fluids to further increase the efficiency of CSP power plants.

DOE anticipates making 10 to 25 awards through this competitive solicitation. The total research investment in advanced solar technologies is expected to exceed $75 million. This includes a minimum 20% cost share by the private sector for research and development phases and a minimum 50% private cost share for final demonstration phases.

Applications for this solicitation are due on or before Thursday, July 10, 2008. Funding beyond monies available in Fiscal Year 2008 are subject to appropriations from Congress. For more information on this Funding Opportunity Announcement (FOA), visit http://www1.eere.energy.gov/financing/solicitations_detail.html?sol_id=16.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

DOE Holds PV Accelerated Aging Workshop for Industry

More than 100 participants, including 50 companies, researchers, and DOE officials, attended the Accelerated Aging Testing and Reliability in Photovoltaics Workshop, held April 1–2, in Denver. The objective was to discuss the industry's needs, priorities, and recommendations on testing and reliability issues related to accelerated aging.

Industry leaders described challenges faced daily in building reliable systems, and nine breakout sessions elicited additional information on reliability issues, needs, and priorities for improvement. Workshop discussions emphasized systems issues where the implications of reliability for performance, warranty and actual life, market share, and finance manifest themselves.

During the workshop, one of the primary requests was to share and analyze failure-related information from fielded systems to establish better correlations between accelerated life testing and system life. Other issues were safety as an integral part of reliability, specific packaging reliability issues, and manufacturing diagnostics, especially for the emerging thin-film and concentrating PV products. More detailed information about the workshop can be found at www.eere.energy.gov/solar/accelerated_aging_2008_workshop.html.

Mystic Seaport Museum is Newest Solar America Showcase

On May 29, the U.S. Department of Energy (DOE) announced the Mystic Seaport Museum as a recipient of a Solar America Showcase award, which provides technical assistance from solar energy experts to high-visibility, large-scale solar installations.

The re-created 19th century coastal village at Mystic Seaport. The Mystic Seaport Museum has plans to install a 1-megawatt photovoltaic system.

The Mystic Seaport Museum is a leading center for maritime research and education. Located in Mystic, Connecticut, on the site of three historic shipyards, the tourist attraction provides educational opportunities for more than 300,000 people annually. The plan to install a 1-megawatt photovoltaic system on an historic structure presents unique challenges to be addressed by DOE's technical assistance award. Technical assistance may include:

- Regulatory and permitting assistance
- Structural analysis of the existing building
- Suggestions for structural upgrades to support the new solar system
- Architectural, mechanical, and electrical design assistance to ensure compliance with state-of-the-art solar design principles and building codes.

In addition, technical experts will assist with overall project management and provide best practices and "lessons learned" from other solar projects.

"Solar at Mystic Seaport Museum is a perfect fit," said Tom Kimbis, Acting Program Manager of the Solar Energy Technologies Program. "The museum was built on the dream of creating a dynamic, educational institution to preserve America's maritime culture—and turn achievements of the past into an inspirational force for the future. Mystic's solar project is itself an inspirational achievement in wholeheartedly embracing a critical energy source for our Nation's future."

Past showcase winners include the following:

- Forest City Military Communities, for the proposal, *Residential Hybrid Solar Electric & Thermal Systems in Hawaii*. DOE is helping to determine the feasibility of incorporating hybrid solar-electric and solar-thermal systems such as solar water heating into a large military-residential project in Oahu.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

ASES Salutes NREL's Kazmerski

The American Solar Energy Society (ASES) bestowed its highest honor on NREL's Larry Kazmerski at the 37th annual ASES National Solar Conference in San Diego. Kazmerski received the Charles Greeley Abbot Award—touted as the nation's top solar award—for his four decades of visionary leadership and breakthrough research in solar energy.

"The solar energy industry would not be where it is today without Kaz's pioneering research and inspiring leadership," said Brad Collins, executive director of ASES. "It's an honor to present him with this distinguished award."

Kazmerski was recognized for his leadership as director of the National Center for Photovoltaics, his technological contributions to reducing costs and improving solar energy efficiency, and his continuous advocacy for solar energy research. With more than 300 published journal papers on solar cells, thin films, nanotechnology, and other emerging technologies, he led NREL's efforts to earn four R&D 100 Awards, including one for developing the first solar cell to break the 40% conversion efficiency barrier—the solar equivalent of the 4-minute mile.

- Orange County, Florida, for the proposal, *Photovoltaic Demonstration and Research Facility & Family Learning Center*. DOE is helping to evaluate the technical feasibility of placing a 1-MW PV system on the Orange County Convention Center, the second-largest convention center in the southeastern U.S.
- City of San Jose, California, for the proposal, *Smart Solar Initiative*. DOE is providing technical and cost-benefit analyses in evaluating the potential of municipal buildings and complexes in San Jose for photovoltaic and solar-thermal applications.

The Notice of Technical Assistance for the next round of Solar America Showcase awards closed on June 12, 2008. More information can be found at www.eere.energy.gov/solar/solar_america/solar_america_showcases.html.

Environmental Analysis Assesses Solar on Public Lands

The Solar Energy Technologies Program and the Bureau of Land Management (BLM) have initiated a joint Programmatic Environmental Impact Statement (PEIS) to assess the environmental, social, and economic impacts associated with solar energy development on BLM-managed public land in six western States: Arizona, California, Colorado, Nevada, New Mexico, and Utah.

The joint PEIS will also evaluate a number of alternative management strategies to determine which ones present the best management approach for the agencies to adopt to mitigate potential impacts and facilitate solar energy development while carrying out their respective missions. The measures adopted as a result of this PEIS will provide consistency and certainty for solar energy development and will help expedite environmental analysis for site-specific projects in the future.

A public scoping period began with the Notice of Intent, published in the Federal Register on May 29, 2008, and it will continue through July 15, 2008. A series of public scoping meetings have been held throughout the month of June in eight cities in Arizona, California, Colorado, Nevada, New Mexico, and Utah. An additional public scoping meeting is planned for 6 p.m. on July 8 in Tucson, Arizona.

For more information on the Solar Energy Development PEIS and opportunities for submitting comments, check the project Web site: http://solareis.anl.gov.

Financial Institutions Learn about Utility-Scale Solar Generation Opportunities

On May 1, the Solar Program's Tommy Rueckert, Systems Integration Team Lead, and Program consultant Charles Jennings, provided an overview of opportunities in which the debt capital and structured finance community can participate in the deployment of larger-scale solar-electric generation technologies. The audiences represented some 15 financial firms at the New York offices of HSH Nordbank and Lehman Brothers. In response to these presentations, three of the attending firms have begun white papers to investigate the opportunity presented for potentially financing the deployment of solar energy in the U.S.

Close-up of a module using high-efficiency solar cells (SolFocus Corporation 2007). NREL recently won an R&D 100 award with Boeing Spectrolab for developing a high-efficiency concentrator solar cell that achieved the highest efficiency level of any PV device ever when it broke the 40% conversion efficiency barrier, making it twice as efficient as a typical silicon solar cell.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

NREL Develops New High-Efficiency Solar Devices that Could Increase Cost Savings

Solar cells made from indium gallium phosphide, gallium arsenide, and germanium (InGaP, GaAs and Ge) have ultrahigh efficiencies and are used for space exploration and by utilities. However, Ge as a bottom junction limits manufacturers from attaining higher theoretical efficiencies. Recently, NREL demonstrated high efficiencies in two ultrathin, Ge-free, triple-junction devices with nearly optical bandgaps. These inverted designs could lead to cost savings for solar manufacturers through substrate reuse, flexible and light-weight devices, and rejection of unused infrared light for reduced heating.

"The concentrating photovoltaics industry has an ongoing pressing need for cells with increased power output, potential for reduced cost through substrate reuse, and better thermal management," said NREL researcher Dan Friedman. "This cell delivers on all three counts, and thus contributes to the achievement of the industry's performance and cost goals."

NREL's devices achieved efficiencies of 33.8% at 1 sun, 40.8% at 326 suns, and 39.2% at 841 suns. The devices were grown by organometallic vaporphase epitaxy in an inverted order relative to more conventional multijunction devices. The inverted design allows scientists to grow low-stress, low-defect metamorphic bottom junctions without damaging the top lattice-matched junctions of a solar device.

Industry Update

Kimbis Welcomes Solar 2008 Attendees in San Diego

Tom Kimbis, Acting Program Manager for the Solar Energy Technologies Program, delivered a keynote welcome on the Solar America Initiative (SAI) at the American Solar Energy Society's Solar 2008 Conference, held May 4–7 in San Diego, Calif. Kimbis presented a status report of solar progress under the SAI. But he also urged audience members, in the face of higher silicon prices and immediate profits on Wall Street, to push forward in continuing to advance the underlying science and policies needed to make solar a success over the mid and long term. Additionally, Katie Bolcar, a Presidential Management Fellow with the Solar Program, presented a session on developing the solar workforce.

Nearly 5,000 people attended the conference and visited the exhibition hall, where the Solar Program had a booth highlighting the DOE's solar efforts and available funding opportunities. Solar 2008 was sponsored, in part, by DOE's Office of Energy Efficiency and Renewable Energy (EERE).

International PV Power Systems Programme Holds 31st Executive Committee Meeting

The International Energy Agency (IEA) Photovoltaic Power Systems (PVPS) Programme held its 31st Executive Committee meeting in April. The committee released the following two reports on urban-scale, grid-connected PV applications:

- *Analysis of PV System's Values beyond Energy*, an analysis of economic, environmental, and tangential values for most countries, by stakeholder
- *Urban BIPV in the New Residential Construction Industry*, a study of innovation literature as it relates to building-integrated photovoltaics (BIPV), BIPV issues specific to building type, and measures based on the PV industry and policy to encourage BIPV in the residential building industry.

The *2007 Annual Report*, which features an update of all the PVPS tasks, as well as PV technology status and prospects in IEA PVPS countries, was also released. All reports can be downloaded at www.iea-pvps.org.

WGA Kicks Off Western Renewable Energy Zone Initiative

The Western Governors' Association (WGA) kicked off the Western Renewable Energy Zone (WREZ) initiative on May 28. The initiative will involve four phases: 1) identify Renewable Energy Zones (REZs) in the Western Interconnection, one of the two major power grids in North America; 2) develop regional transmission plans to enhance access to renewable resources located in these zones; 3) develop a transparent process for bringing together buyers and sellers of electricity generated from renewable energy sources; and 4) build interstate cooperation to address permitting and multi-state cost-allocation issues.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

Solar America Initiative Featured at Photonic Applications, Systems and Technologies Conference

Scott Stephens, representing the Solar Program, provided an overview of the DOE Solar America Initiative at the Conference on Photonic Applications, Systems and Technologies, held in San Jose, Calif., May 6–8. The presentation explored various technologies and programmatic strategies to accelerate cost reductions for grid-tied applications—from solar farms to residential rooftops. This presentation, as well as others from the conference, can be found at www.oida.org/PHAST2008.

Utah Governor Huntsman addressed the steering committee and members of the public who attended the meeting, emphasizing the critical state of affairs for our nation's energy supply. "Unprecedented challenges face the West in meeting the growing demand for electricity, while achieving local and global environmental goals. The WREZ project will help us tap our vast renewable resources and develop transmission that considers communities, environmental impacts, and costs."

DOE's Assistant Secretary for Electricity Delivery and Energy Reliability, Kevin Kolevar, announced DOE's plans to contribute up to $2.3 million over 3 years to the initiative, subject to annual appropriations.

Market Transformation

Solar America Cities Holds First Annual Meeting in Tucson

In April, the Department of Energy's 25 Solar America Cities met for the first time at the First Annual Solar America Cities Meeting in Tucson, Ariz. The 12 newly selected Solar America Cities joined the 13 inaugural cities, selected in 2007, over 2-1/2 days to discuss best practices, share lessons learned, present new ideas, and engage in networking opportunities. Also in attendance were DOE's solar market transformation team, Tiger Team technical assistance leads from the national laboratories, and city mayors Bob Walkup (Tucson), Will Wynn (Austin), John Hieftje (Ann Arbor), and Debora Fudge (Windsor, Calif., part of the Santa Rosa team), who spoke enthusiastically about solar opportunities in their cities.

The meeting included presentations by solar energy experts on best practices and national trends, as well as presentations by city teams and DOE. Additionally, the 2007 cities were able to ask questions and provide feedback to DOE about the program, and the 2008 cities were introduced to Solar America Cities and DOE's solar market transformation program.

On the final day, city representatives discussed various topics related to solar market transformation at facilitated networking tables. Topics included:

- solar hot water
- solar financing
- mapping and data monitoring
- public outreach
- permitting, zoning, and solar access laws
- solar workforce development
- engaging utilities on solar
- solar urban planning.

The meeting was a tremendous opportunity for the 25 cities to meet one another and learn from each other's successes and challenges. Collaborations are already taking shape among DOE's partner cities, with regional meetings planned for the near future.

Presentations from the First Annual Solar America Cities Meeting can be downloaded at www.solaramericacities.org/Meetings.aspx. DOE is working with its partner cities to identify a host city for next year's Annual Meeting, anticipated for spring 2009.

(top) SETP Acting Program Manager, Tom Kimbis (left), pauses for a photo with Ann Arbor Mayor John Hieftje, Austin Mayor Will Wynn, and Tucson Mayor Bob Walkup, at the 1st Annual Solar America Cities Meeting.

(bottom) City participants at the 1st Annual Solar America Cities Meeting were actively engaged in discussing various topics related to solar deployment.

Bodman and Karsner Kick Off Solar America Cities Efforts in New York, Boston, and Austin

In April, Department of Energy officials presented the cities of New York, Boston, and Austin with Solar America City road signs at press events where the cities announced solar plans. These three cities were selected as DOE Solar America Cities in June 2007.

On April 8, DOE Assistant Secretary for Energy Efficiency and Renewable Energy Andy Karsner presented New York Mayor Michael Bloomberg with a Solar America City road sign at a press event held in conjunction with Newsweek's second annual Global Environmental Leadership Conference in Washington, D.C. At the event, Mayor Bloomberg announced the city's plans to issue a Request for Proposal for 2 megawatts (MW) of solar power to be installed on city-owned buildings in all five boroughs, as part of PlaNYC. The project is expected to more than double the city's current solar electric capacity.

The following day, Energy Secretary Samuel Bodman spoke at an event in Boston, Mass., to help launch the Solar Boston program and dedicate the new solar-thermal hot water system installation at Fenway Park. Boston has set an aggressive goal of 25 MW of solar capacity by 2017. The Secretary presented Boston Mayor Thomas Menino with an official Solar America City road sign. Solar Energy Technologies Program's Acting Program Manager, Tom Kimbis, and Presidential Management Fellow, Hannah Muller, were also in attendance.

On April 25, Assistant Secretary Karsner attended the Texas Solar Forum in Austin, Texas, where he announced the City of Austin's designation as a Solar America City and presented Roger Duncan, General Manager of Austin Energy, with an official Solar America City road sign. Austin has a goal to install 100 MW of solar by 2020. In April, Austin Energy's Solar Rebate Program reached a milestone of 500 solar installations that have received rebates through the municipal utility's program.

DOE Solar Displays Featured at U.S. Botanic Garden

This summer, the U.S. Botanic Garden in Washington, DC, is hosting a sustainability exhibition entitled *One Planet—Ours!* The exhibition, which opened Memorial Day weekend, will be on display through Columbus Day weekend. It features organizations from around the country, including government agencies, non-governmental organizations, and individuals who are leading efforts toward sustainable lifestyles.

The Department of Energy's Solar America Cities program was invited to install a display about the program and how DOE's 25 partner cities are helping to pave the way to a sustainable solar future. The display consists of a series of 11 informative panels—two panels about Solar America Cities and how solar energy technologies work, and nine panels that each cover a different topic related to solar deployment, including:

- How cities are making solar more affordable for homeowners
- Solar financing for businesses and governments
- Solar workforce development

Secretary of Energy Samuel Bodman (left) presents Boston Mayor Thomas M. Menino with a Solar America City road sign.

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

SAI Presented at Texas Solar Forum

Charlie Hemmeline, Acting Market Transformation Lead for the Solar Program, spoke at the Texas Solar Forum: The Business Case for Texas' Solar Future, held April 24–25 at the Texas State Capitol in Austin, Texas. The Forum's goal was to stimulate dialogue on the best methods for Texas to become a world leader within the solar industry and market. Hemmeline highlighted the State's potential for job creation and installed PV capacity under 2015 Solar America Initiative (SAI) projections for solar cost-competitiveness in Texas. Legislators and staff in attendance also heard from a cross-section of leading solar industry experts, utilities, and economic development organizations from around the State. For a copy of the event agenda, visit http://idisk.mac.com/crowan-Public/Solar/solar_forum.pdf.

- Various solar applications, including residential, commercial, and municipal buildings; schools; utility-scale solar plants; and building-integrated solar technologies.

DOE is also featuring a net-metering display and an interactive solar-powered fountain as part of the *One Planet—Ours!* exhibition. The net-metering display includes a grid-connected photovoltaic (PV) system with interactive features that demonstrate where a home's energy comes from—either the PV system or the grid—depending on the amount of energy consumed and produced. The solar-powered water fountain is mounted on a turntable, allowing visitors to understand the concept of solar orientation by rotating the PV panels toward or away from the sun.

The grounds of the U.S. Botanic Garden are located on the National Mall across from the U.S. Capitol. More information is available at www.usbg.gov.

NARUC Hosts Mid-Atlantic Solar Policy Dialogue

In mid-April, the National Association of Regulatory Utility Commissioners (NARUC) hosted a DOE-sponsored workshop entitled "Mid-Atlantic Solar Policy Dialogue." This workshop offered state utility commissioners and state energy office staff in this very active region the opportunity to interact and discuss regulatory practices for furthering the integration of solar technologies into the mid-Atlantic energy market. The Solar Program's Market Transformation lead, Charlie Hemmeline, discussed DOE's efforts, as well as current and expected growth for solar adoption in the mid-Atlantic markets. The New Jersey Board of Public Utilities shared its progress on New Jersey's plan to transition to a Solar Renewable Energy Credit (SREC)-only PV incentive program. Also presenting at the dialogue were representatives from the Maryland Energy Administration, Delaware Energy Office, and New York State Energy Research and Development Authority (NYSERDA). For electronic versions of the presentations, visit http://www.naruc.org/programs.cfm?c=Domestic&projectID=12. A similar dialogue for western states was held in Whitefish, MT, on June 15.

Key Ingredients Outlined for Cities to "Go Solar" at ICLEI Local Action Summit

Hannah Muller, a Presidential Management Fellow with DOE's Solar Program, attended ICLEI's Local Action Summit on May 14–16 in Albuquerque, NM. This Summit brought together cities from across North America that have pledged to meet greenhouse gas emissions reduction targets through comprehensive climate action plans. Muller presented "Building a Sustainable Solar Infrastructure," describing DOE's Solar America Cities program and outlining key action areas for cities looking to "go solar." The Solar Program had a booth at the conference that provided basic information on solar energy, as well as information on open funding opportunities, to the nearly 400 attendees. "ICLEI—Local Governments for Sustainability" is now the official name for the environmental organization established in 1990 by more than 200 local governments from 43 countries as the International Council for Local Environmental Initiatives.

(top) Sarah Truitt, a consultant to the Solar Program, explains grid interconnection and net metering to young visitors at the U.S. Botanic Garden's One Planet—Ours! exhibition.

(bottom) David Rodgers, Deputy Assistant Secretary for Energy Efficiency at DOE's Office of Energy Efficiency and Renewable Energy (EERE), and Wendy Burt, from EERE's Office of Technology Advancement and Outreach, pose in front of one of the Solar America Cities panels at the U.S. Botanic Garden's sustainability exhibition.

Hannah Muller from DOE's Solar Program discusses collaborative opportunities for Solar America Cities at ICLEI's Local Action Summit.

Solar ABCs Holds Gap Analysis Meeting

The Solar America Board for Codes and Standards (Solar ABCs) Steering Committee met April 8–9 at the DOE Field Office in Golden, Colo., to focus on issues and activities developed during its first year. Findings from the meeting, compiled into a Gap Analysis Report issued to DOE, identify specific needs and priorities for the Board's out-year operations. The findings will be used by the committee to generate prioritized guidelines for all future coordination and implementation project activities by Solar ABCs.

The Solar ABCs Study Panels address four specific issues: Interconnection (Study Area 1), Net Metering (Study Area 2), Local Codes (Study Area 3), and PV/CSP Product Standards (Study Area 4). Coordination activities are conducted by Working Panels to bridge the different code-setting processes in the following five areas: building electrical codes, product safety codes, national standards, interconnection and net metering, and international standards. More information on Solar ABCs can be found at www.solarABCs.org.

DOE Solar Program and Partner Publications

MARKET TRANSFORMATION

Renewables Portfolio Standards in the United States – A Status Report with Data through 2007

April 2008

Lawrence Berkeley National Laboratory et al.

As the popularity of renewable portfolio standards (RPS) has grown, so too has the need to keep up with the design, early experience, and projected impacts of these programs. This report—the first in a regular series—seeks to fill this need by providing basic, factual information on RPS policies in the United States.

http://eetd.lbl.gov/EA/emp/reports/lbnl-154e-revised.pdf

Mainstreaming Solar Electricity

April 2008

Clean Energy Group, Peregrine Energy Group

Clean Energy Group and Peregrine Energy Group released a report that highlights policies and programs that states can implement to advance local solar photovoltaic markets. The report is based on a survey of the real-time experience of the leading state solar programs. Today, states across the U.S. are taking the lead in supporting solar energy, recognizing this technology's environmental and economic benefits. States are moving aggressively to address the high first costs and market challenges facing solar technology. The report describes key policies and program strategies that have emerged as effective tools for states to advance widespread deployment of solar energy.

www.statesadvancingsolar.org

NATIONAL LABORATORY TECHNOLOGY DEVELOPMENTS & DOE NEWS

DOE's Programs Exhibit at NAHB Green Building Conference

The Solar Program exhibited alongside the DOE Building Technologies Program at the National Association of Home Builders' Green Building Conference in New Orleans on May 11–13. The Solar Program and National Renewable Energy Laboratory (NREL) created a new publication entitled "A Homebuilder's Guide to Going Solar," which was distributed at the conference. The publication walks builders through the decision-making process of incorporating solar technologies (i.e., PV and/or solar hot water). Plans are under way to turn the guide into an interactive tool on the Solar Program's Web site. The publication is available for download at www.eere.energy.gov/solar/pdfs/43076.pdf.

Solar Workforce Development Highlighted at Renewable Energy and Energy Efficiency Conference

At the second Renewable Energy and Energy Efficiency Workforce Education Conference, held March 18–20 in Troy, NY, Katie Bolcar, a Presidential Management Fellow with the Solar Program, presented a session on the Solar Program's support of solar workforce development. This support is presently focused on the North American Board of Certified Energy Practitioners (NABCEP) and providing training for code officials; the Solar Program plans on expanding its efforts in solar workforce development over the next twelve months. Recognizing that educational institutions face many challenges in providing a qualified workforce for the rapidly expanding solar industry, the Solar Program will strive to help meet those challenges through this effort.

Photovoltaic Capacity Valuation Methods

May 2008

Solar Electric Power Association, Clean Power Research, State University of New York at Albany, Sungevity

As utilities work to meet electricity demand, especially during peak summer days, examining the relationship between demand and solar photovoltaic (PV) output can be of significant value to the utility industry. Over the years, energy researchers have developed different statistical methods for calculating this relationship. However, there is no consensus across the utility or solar industries on a statistical method for calculating the capacity value of PV or its practical use in electricity markets and utility planning. The new report, Photovoltaic Capacity Valuation Methods, released by the Solar Electric Power Association (SEPA) in consultation with project partners, and funded in part by the U.S. Department of Energy's Solar America Initiative, examines the variety of capacity calculation methods in use, and lays the foundation for building consensus within the solar industry, electric utility, and research communities.

www.solarelectricpower.org/docs/PV%20CAPACITY%20REPORT.pdf

Solar Photovoltaic Financing: Deployment on Public Property by State and Local Governments

May 2008

National Renewable Energy Laboratory

State and local governments have grown increasingly aware of the economic, environmental, and societal benefits of taking a lead role in U.S. implementation of renewable energy, particularly distributed photovoltaic (PV) installations. Recently, solar energy's cost premium has declined as a result of technology improvements and an increase in the cost of traditional energy generation. At the same time, a nationwide public-policy focus on carbon-free renewable energy has created a wide range of financial incentives to lower the costs of deploying PV even further. These changes have led to exponential increases in the availability of capital for solar projects, and tremendous creativity in developing third-party ownership structures. As significant users of electricity, state and local governments can be an excellent example for solar PV system deployment on a national scale. Many public entities are considering deployment on public building rooftops, but also, large-scale applications on available public lands. The changing marketplace requires that state and local governments be financially sophisticated to capture as much of the economic potential of a PV system as possible. This report examines ways that state and local governments can optimize the financial structure of deploying solar PV for public uses.

www.nrel.gov/docs/fy08osti/43115.pdf

Utility Solar Business Models: Emerging Utility Strategies & Innovation

May 2008

Solar Electric Power Association

Within the last year, major photovoltaic and concentrating solar thermal plant announcements by utilities across the country are showing how the utility industry can drive solar market transformation. A combination of external drivers is causing utility executives to consider the relevance and importance of solar in their overall business plans, including renewable portfolio standards, impending climate-change policy, and the inverse relationship between increasing costs of traditional generation resources and declining costs of solar resources. This new report offers a proactive look at lessons learned, with a consideration toward developing best practices that will help make solar more practical and profitable in today's shifting energy landscape.

http://solarelectricpower.org/docs/Utility%20Business%20Model%20FINAL%206_03_8.pdf

GRID/BUILDING INTEGRATION

Solar Energy Grid Integration Systems Concept Paper — October 2007

U.S. Department of Energy, Sandia National Laboratories

The inevitable transformation of the electrical grid to a more distributed generation configuration requires solar system capabilities well beyond simple net-metered, grid-connected approaches. Time-of-use and peak-demand rate structures will require more sophisticated systems designs that integrate energy management and/or energy storage into the system architecture. This document provides an overview of the SEGIS concept, which promotes the development of technologies that can increase the penetration of PV into the utility grid while maintaining or improving power quality and the reliability of the utility grid. The emphasis of the SEGIS program is on developing inverters/controllers that enable integration of large amounts of PV into the electric utility distribution system.

www.eere.energy.gov/solar/solar_america/pdfs/segis_concept_paper.pdf

Renewable System Inteconnection Study (15 reports) — February 2008

National Renewable Energy Laboratory, Sandia National Laboratories, et al.

As the market share of renewable energy grows, concerns about potential impacts on the operation and stability of the electricity grid may create barriers to further expansion. To overcome these potential barriers, the U.S. Department of Energy (DOE) launched the Renewable Systems Interconnection (RSI) study during the spring of 2007. DOE brought together a team of industry experts to address the technical, regulatory, and business issues that have the potential to limit the market uptake of distributed PV and other renewable technologies. The RSI effort resulted in the completion of 14 studies and an executive summary.

http://www1.eere.energy.gov/solar/solar_america/rsi.html

Solar Energy Grid Integration Systems – Energy Storage Concept Paper — May 2008

U.S. Department of Energy, Sandia National Laboratories

Although electric energy storage is a well-established market, its use in PV systems is generally for stand-alone systems. This paper describes the scope of the SEGIS-ES Program; why it will be necessary to integrate energy storage with PV systems as PV-generated energy becomes more prevalent on the nation's utility grid; and the applications for which energy storage is most suited and for which it will provide the greatest economic and operational benefits to customers and utilities.

www.eere.energy.gov/solar/solar_america/pdfs/segis-es_concept_paper.pdf

Critical Renewable Energy Storage Technology Study Plan — June 2008

U.S. Department of Energy, Sandia National Laboratories,
National Renewable Energy Laboratory, et al.

This document defines a follow-on effort to the original RSI studies, with a more detailed focus on integrating renewable energy and storage technologies to meet the challenges of high penetration. The conclusions of the RSI studies will serve as a basis for the direction of the Critical Renewable Energy for Storage Technology (CREST) effort. There is a key difference between the two, however: RSI has focused to date on high penetration of distributed PV. But CREST will address issues and needs at both the transmission and distribution levels down to the end user, while considering renewable technologies such as wind and CSP, as well as address issues for stranded renewable resources.

www1.eere.energy.gov/solar/solar_america/pdfs/crest_study_requirements.pdf

Summary of Solar Program Funding Opportunities

Pipeline of Program Activities

The Solar Energy Technologies Program (SETP) is engaged with a range of stakeholders and activities along the solar pipeline. From Materials and Device Concepts to key Market Transformation efforts, SETP is supporting the development of innovative projects to accelerate the growth of the U.S. solar industry.

Figure 1. Summary of Solar Program Funding Opportunities

CLOSED PENDING OPEN PROPOSED

FUNDING OPPORTUNITY ANNOUNCEMENT (FOA) OR SOLICITATION	AWARD DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
Systems Development and Manufacturing: Technology Pathway Partnerships (TPP)	March 8, 2007	$168 M over 3 years	Cost-shared industry-led projects for PV systems development, and manufacturing demonstrations. Collective portfolio of projects will reduce direct manufacturing and installation costs by at least 30% by 2010, and will deliver up to 2.4 GW of new manufacturing capacity by year-end 2010.	• Amonix (CA) • Boeing (CA) • BP Solar (MD) • Dow Chemical (MI) • General Electric (DE) • GreenRay (MA) • Konarka (MA) • Miasole (CA) • Nanosolar (CA) • Soliant (CA) • SunPower (CA), includes PowerLight (CA) • United Solar Ovonic (MI)
Market Transformation: Codes and Standards	March 26, 2007	$4.2 M over 5 years	Working Group will address code development and outreach activities in areas of critical importance to solar market penetration (e.g., interconnection procedures, net metering, product safety, international standards coordination). Will lead to a major improvement in the responsiveness, effectiveness, and accessibility of codes and standards to U.S. solar stakeholders at all levels.	Solar America Board of Codes and Standards (SolarABCs) PV Capacity Credit Valuation Study: • State University of New York (NY) • Tucson Electric Power (AZ)
Market Transformation: State/Utility Solar Technical Outreach	March 27, 2007	$1.7 M over 3 years	Will conduct tailored solar technical outreach to states and utilities and will provide resources and best practices to address solar issues faced by states and utilities.	Utility Technical Outreach: • Solar Electric Power Association (DC) State Technical Outreach: • Clean Energy Group (VT) • National Association of Regulatory Utility Commissioners (DC) • National Conference of State Legislatures (CO)

Continued on following page

Summary of Solar Program Funding Opportunities, *Continued*

CLOSED PENDING OPEN PROPOSED

FOA OR SOLICITATION	AWARD DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
Market Transformation: Solar America Showcases (SAS)	May 16, 2007	Technical assistance only	Showcases are designed to help facilitate large-scale installations that involve cutting-edge solar technologies, novel applications of solar, high-visibility sites, and/or high likelihood of replicability. SAS does not provide financial assistance; instead, it provides technical assistance through teams of DOE-funded solar experts from the National Renewable Energy Laboratory, Sandia National Laboratories, the Southeast and Southwest Regional Experiment Stations, and private firms.	• City of San Jose (CA) • Forest City Military Communities (HI) • Orange County Convention Center (FL)
Component and Pilot Scale Production: PV Module Incubators	June 20, 2007	$27 M over 18 months	Projects focused on solving technical challenges that must be overcome to scale-up manufacturing and commercialize new products by 2010 and shortening the timeline for companies to transition pre-commercial PV technologies into full-scale manufacturing.	• AVA Solar (CO) • Blue Square Energy (MD) • CaliSolar (CA) • EnFocus Engineering (CA) • MicroLink Devices (IL) • Plextronics (PA) • PrimeStar Solar (CO) • Solaria (CA) • SolFocus (CA) • SoloPower (CA)
Market Transformation: Solar America Cities	June 20, 2007	$2.5 M and technical support over 2 years	Cities will integrate solar technologies into city energy planning, zoning, and facilities; streamline city-level regulations and practices that affect solar adoption by residents and local businesses (e.g., permitting, inspections, local codes); and promote solar technology among residents and local businesses (e.g., outreach, curriculum development, and/or implementation, incentive programs).	• Ann Arbor (MI) • Austin (TX) • Berkeley (CA) • Boston (MA) • Madison (WI) • New Orleans (LA) • New York (NY) • Pittsburgh (PA) • Portland (OR) • Salt Lake City (UT) • San Diego (CA) • San Francisco (CA) • Tucson (AZ)

Continued on following page

Summary of Solar Program Funding Opportunities, *Continued*

CLOSED PENDING OPEN PROPOSED

FOA OR SOLICITATION	AWARD DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
Device and Process Proof of Concept: Future Generation PV Devices and Processes	November 8, 2007	$21.7 M over 3 years	For companies to perform exploratory R&D for developing innovative, highly disruptive future-generation solar electric technologies. Device and manufacturing process research targeted here is expected to produce prototype cells and/or processes by 2015, with full commercialization in the 2020–2030 timeframe.	• Arizona State University (Tempe, AZ) • California Institute of Technology (Pasadena, CA) • Massachusetts Institute of Technology (Cambridge, MA) • Mayaterials, Inc. (Ann Arbor, MI) • Pennsylvania State University (University Park, PA) • Rochester Institute of Technology (Rochester, NY) • Solasta, Inc. (Newton, MA) • Solexant, Inc. (Sunnyvale, CA) • Soltaix, Inc. (Los Altos, CA) • Stanford University (Stanford, CA) • University of California, Davis (Davis, CA) • University of California, San Diego (La Jolla, CA) • University of Colorado (Boulder, CO) • University of Delaware (Newark, DE) • University of Florida (Gainesville, FL) • University of Illinois (Urbana, IL) • University of Michigan (Ann Arbor, MI) • University of South Florida (Tampa, FL) • University of Washington (Seattle, WA) • Voxtel, Inc. (Beaverton, OR) • Wakonda Technologies (Fairport, NY)
Concentrating Solar Power Funding Opportunity Announcement	November 29, 2007	$5.2M for Phase 1	For companies to develop storage solutions, manufacturing approaches, and new system concepts for large-scale concentrating solar power (CSP) plants. Collaborative public/private partnerships established herein will work to reduce the nominal levelized cost of energy of CSP power plants from 13-17 ¢/kWh in 2007 to 7-10¢/kWh by 2015 and 5-7¢/kWh by 2020.	• 3M (St. Paul, MN) • Alcoa (Alcoa Center, PA) • Brayton Energy (Hampton, NH) • Hamilton Sundstrand (Canoga Park, CA) • Infinia (Kennewick, WA) • PPG Industries (Pittsburgh, PA) • Skyfuel (New York, NY) • Solar Millennium (Berkeley, CA) • Solucar (Lakewood, CO)

Continued on following page

Summary of Solar Program Funding Opportunities, *Continued*

CLOSED PENDING OPEN PROPOSED

Systems Development and Manufacturing: University Product and Process Development Support	March 12, 2008	Up to $30M over 3 years	For universities to perform targeted materials science and process engineering research that offers direct, near-term improvements in PV products and development processes for commercialization by 2010.	• Arizona State University with SolFocus and Soliant Energy • California Institute of Technology with Spectrolab • Georgia Institute of Technology with Sixtron • Massachusetts Institute of Technology with CaliSolar • North Carolina State University with Spectrolab • Pennsylvania State University with Honeywell • University of Delaware with Dow Corning • University of Delaware with SunPower • University of Florida with Global Solar Energy Inc., International Solar Electric Technology Inc., Nanosolar Inc., and Solyndra Inc • University of Toledo with Solar Fields, LLC • University of Toledo with Xunlight
Solar America Cities	March 28, 2008	$2-$3 M over 2 years	Building on the success of the initial Solar America Cities FOA, the Solar Program issued a similar FOA to allow more cities to participate. Solar America Cities are recognized as partners who are highly committed to solar technology adoption at the local level.	• Denver (CO) • Houston (TX) • Knoxville (TN) • Milwaukee (WI) • Minneapolis-St. Paul (MN) • Orlando (FL) • Philadelphia (PA) • Sacramento (CA) • San Antonio (TX) • San Jose (CA) • Santa Rosa (CA) • Seattle (WA)
Solar America Showcases	May 29, 2008	Technical assistance only	The Solar America Showcases are designed to help facilitate large-scale installations that involve cutting-edge solar technologies, novel applications of solar, high-visibility sites, and/or high likelihood of replicability. SAS does not provide financial assistance; instead, it provides technical assistance through teams of DOE-funded solar experts from the National Renewable Energy Laboratory, Sandia National Laboratories, the Southeast and Southwest Regional Experiment Stations, and private firms.	• Mystic Seaport Museum (CT)

Continued on following page

Summary of Solar Program Funding Opportunities, *Continued*

CLOSED PENDING OPEN PROPOSED

FOA OR SOLICITATION	CLOSING DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
Component and Pilot Scale Production: Solar Energy Grid Integration Systems	February 4, 2008	Up to $6.25 M per year over 3 years	To perform exploratory R&D targeting dramatic improvements in inverters and energy management technologies for solar electricity production.	The Solar Program released this FOA on November 28, 2007, which will provide up to $6.25 M per year for 3 years. There will be up to fourteen Phase 1 recipients in FY 2008. Applications were due on February 4, 2008, and awards are expected to be announced in July 2008.
Component and Pilot Scale Production: PV Module Incubators- Round 2	April 18, 2008	$3 M per award	Projects focused on solving technical challenges that must be overcome to scale-up manufacturing and commercialize new products by 2010-2011 and shortening the timeline for companies to transition pre-commercial PV technologies into full-scale manufacturing. PV Incubator is led by the National Renewable Energy Laboratory.	LOI released: March 3, 2008 Technical Questions Due: March 24, 2008 Responses due: April 18, 2008 Responses reviewed: April 25-June 11, 2008 Selections announced: August 2008 Awards made: Late-August, 2008
Solar America Showcases	June 12, 2008	Technical assistance only	The Solar America Showcases Notice of Technical Assistance (NOTA) was well received and the Solar Program plans to release a similar NOTA. To receive technical assistance for a Solar America Showcase, the project must be a large-scale (>100 kW), high-visibility solar installation that uses a novel solar technology, a novel application for a solar technology, and replicable components.	Notice of Technical Assistance currently closed, see: http://e-center.doe.gov/iips/faopor.nsf/8373d2fc6d83b66685256452007963f5/c21e8d152fceb9e1852573b8007c40a8?OpenDocument.
FOA OR SOLICITATION	CLOSING DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
Concentrating Solar Power: Advanced High Temperature Storage Solicitation	July 10, 2008	Up to $60M over 3-4 years	Two topic areas are of interest for this solicitation to support CSP technologies: (1) advanced high temperature heat transfer fluids (HTF) with an objective to identify and characterize novel fluids or fluid types that possess the physical and chemical properties required for an improved HTF and thermal storage fluid for CSP technologies; and (2) novel concepts for high temperature thermal energy storage (TES) with an objective is to generate and evaluate novel concepts for TES that have potential to reduce the cost of TES to less than $15/kWhthermal and achieve round trip efficiencies greater than 93%. Work in TES may be applicable to any or all CSP technologies, parabolic trough, power tower, linear Fresnel, or concentrating dish. Both objectives work toward the 2015 and 2020 goals of making CSP technologies cost competitive.	Announcement issued: April 30, 2008. Applications due: July 10, 2008. Awards made: August 2008. Anticipated start date: September 9, 2008. FOA# DE-PS36-08GO98032, see: https://e-center.doe.gov/iips/faopor.nsf/UNID/8DEFBC0157F43F198525743B00535BE0?OpenDocument.

Summary of Solar Program Funding Opportunities, *Continued*

CLOSED PENDING OPEN PROPOSED

FOA OR SOLICITATION	CLOSING DATE	FUNDING AMOUNT	DESCRIPTION	STATUS
PV Supply Chain	FY 2008	TBD by appropriations	The PV Supply Chain solicitation will address the grid parity goals of SAI by developing subsystem components, materials, or processes that can be supplied across the industry to reduce cost, enhance performance, or extend lifetime over today's technology.	
Minority University Research Associates	FY 2008	TBD by appropriations	DOE plans to provide support to attract and encourage qualified science, engineering, and business minority undergraduate and graduate students to pursue advanced degrees and careers in science and technology by providing scientific and technical R&D opportunties in solar energy technologies. Will solicit applications from accredited universities and colleges defined as Minority Serving Institutions.	
Education, Training, and Certification	FY 2008	TBD by appropriations	The Solar Energy Technologies Program is also anticipating releasing a new FOA this year for education, training, and certification, with the details to be released at a later date.	

SOLAR EVENTS CALENDAR

Third Annual New Energy Symposium
July 9–10, 2008
Albany, NY
www.neny.org/nes/2008/home

Intersolar North America 2008
July 15–17, 2008
San Francisco, CA
www.intersolar.us

2008 North American Solar Challenge
July 13–22, 2008
Dallas, TX
www.americansolarchallenge.org/

SolWest Renewable Energy Fair
July 25–27, 2008
John Day, OR
www.solwest.org/

American Society of Mechanical Engineers 2nd International Conference on Energy Sustainability
August 10–14, 2008, Jacksonville, FL
www.asmeconferences.org/ES2008/

31st World Energy Engineering Congress (WEEC)
October 1–3, 2008
Washington, DC
www.energycongress.com/

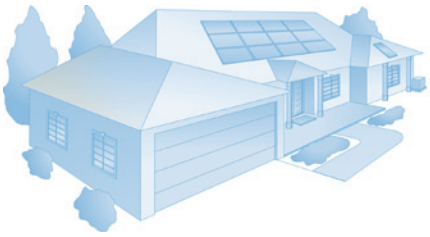
Solar Power 2008
October 13–16, 2008
San Diego, CA
www.solarpowerconference.com/

Greenbuild International Conference and Expo
November 19–21, 2008
Boston, MA
www.greenbuildexpo.org/

Globalcon 2009
April 1–2, 2009
Atlantic City, NJ
www.globalconevent.com

WE WANT TO HEAR FROM YOU

This *DOE Solar Energy Technologies Program Newsletter* is for you—the participants and stakeholders in the DOE Solar Program and the Solar America Initiative. We envision sending this newsletter at least every quarter. If you have any comments or suggestions about the newsletter, e-mail solar@ee.doe.gov.



A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

For more information contact:

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov