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DOE Selects 13 Solar Energy Projects for up to $168 Million in Funding

First funding awards for Solar America Initiative to make solar technology cost-competitive by 2015

LOWELL, MA - U.S. Department of Energy (DOE) Secretary Samuel W. Bodman today announced the selection of 13 industry-led solar technology development projects for negotiation for up to $168 million (FY'07-'09) in funding, subject to appropriation from Congress. These projects will help significantly reduce the cost of producing and distributing solar energy. As part of the cost-shared agreements, the industry-led teams will contribute more than 50 percent of the funding for these projects for a total value of up to $357 million over three years. These cooperative agreements, to be negotiated, will be the first made available as part of President Bush's Solar America Initiative (SAI), a component of his Advanced Energy Initiative (AEI), announced in his 2006 State of the Union Address. Secretary Bodman made today's announcement while visiting Konarka Global Headquarters in Lowell, Massachusetts, one of the selected solar energy project sponsors.

"Solar technology can play a crucial role in moving toward affordable net zero energy homes and businesses – which combine energy efficiency and renewable energy produced on-site. Efficient buildings with solar power generation can help reduce peak demand and ease the need for expensive new generating capacity, transmission, and distributions lines as our economy grows," Secretary Bodman said.

President Bush's AEI challenges Americans to change the way we power our nation. As an integral part of the AEI, the Solar America Initiative aims to bring down the cost of solar energy to make it competitive with conventional electricity sources in the U.S. by 2015. The SAI is also part of the President's commitment to diversify our energy resources through grants, incentives and tax credits and; aims to spur widespread commercialization and deployment of clean solar energy technologies across America, which would provide long-term economic, environmental, and security benefits to our nation.

The teams selected for negotiation have formed Technology Pathway Partnerships (TPP), which include companies, laboratories, universities, and non-profit organizations to accelerate the drive towards commercialization of U.S.-produced solar photovoltaic (PV) systems. These partnerships are comprised of more than 50 companies, 14 universities, 3 non-profit organizations, and 2 national laboratories. DOE funding is expected to begin in FY'07, with $51.6 million going to the TPPs.

In addition, the projects announced today will enable the projected expansion of the annual U.S. manufacturing capacity of PV systems from 240 MW in 2005 to as much as 2,850 MW by 2010, representing more than a ten-fold increase. Such capacity would also put the U.S. industry on track to reduce the cost of electricity produced by PV from current levels of $0.18-$0.23 per kWh to $0.05 - $0.10 per kWh by 2015 – a price that is competitive in markets nationwide.

As part of a broader effort to highlight the Bush Administration's bold energy initiatives, today, Assistant Secretary for Energy Efficiency & Renewable Energy Andy Karsner traveled to United Solar Ovonic in Auburn Hills, Michigan to highlight these selections and the Solar America Initiative. Tomorrow, Under Secretary for Science Dr. Raymond L. Orbach will travel to Boeing in Sylmar, California to discuss today's selections and meet with representatives from the solar industry.

Solar energy is a clean, abundant, widespread, and renewable energy source that can be used to increase electricity generating capacity while decreasing greenhouse gas emissions as compared to other energy conversion pathways. Photovoltaic-based solar cells convert sunlight directly into electricity. They are made of semiconductor materials similar to those used in computer chips. When sunlight is absorbed by these materials, the solar energy knocks electrons loose from their atoms, allowing the electrons to flow through the material to produce electricity. The process of converting light to electricity is called the photovoltaic effect.

Teams Selected For Negotiations under the Solar America Initiative

Amonix - A low-cost, high-concentration PV system for utility markets. This project will focus on manufacturing technology for high-concentrating PV and on low-cost production using multi-bandgap cells. Partners for the project include CYRO Industries, Xantrex, the Imperial Irrigation District, Hernandez Electric, the National Renewable Energy Laboratory (NREL), Spectrolab, Micrel, Northstar, JOL Enterprises, the University of Nevada Las Vegas, and Arizona State University. Subject to negotiations, DOE funding for the first year of the project is expected to be roughly $3,200,000, with approximately $14,800,000 available over three years if the team meets its goals.

Boeing - High-efficiency concentrating photovoltaic power system. This project will focus on cell fabrication research that is expected to yield very high efficiency systems. The partners for the project will be Light Prescription Innovators, PV Powered, Array Technologies, James Gregory Associates, Sylarus, Southern California Edison, NREL, the California Institute of Technology, and the University of California Merced. Subject to negotiations, DOE funding for the first year of the project is expected to be approximately $5,900,000, with approximately $13,300,000 available over three years if the team meets its goals.

BP Solar - Low-cost approach to grid parity using crystalline silicon. This project's research will focus on reducing wafer thickness while improving yield of multi-crystalline silicon PV for commercial and residential markets. Project partners include Dow Corning, Ceradyne, Bekaert, Ferro, Specialized Technology Resources, Komax, Palo Alto Research Center, AFG Industries, Automation Tooling Systems Ohio, Xantrex, Fat Spaniel, the Sacramento Municipal Utility District, Recticel, the Georgia Institute of Technology, the University of Central Florida, and Arizona State University. Subject to negotiations, DOE funding for the first year of the project is expected to be approximately $7,500,000, with approximately $19,100,000 available over three years if the team meets its goals.

Dow Chemical - PV-integrated residential and commercial building solutions. This project will employ Dow's expertise in encapsulates, adhesives, and high volume production to develop integrated PV-powered technologies for roofing products. Partners include Miasole, SolFocus, Fronius, IBIS Associates, and the University of Delaware. Subject to negotiations, funding for the first year of the project is expected to be roughly $3,300,000, with approximately $9,400,000 available over three years if the team meets its goals.

General Electric - A value chain partnership to accelerate U.S. PV growth. This project will develop various cell technologies – including a new bifacial, high-efficiency silicon cell that could be incorporated into systems solutions that can be demonstrated across the industry. Partners include REC Silicon, Xantrex, Solaicx, the Georgia Institute of Technology, North Carolina State University, and the University of Delaware. Subject to negotiations, DOE funding for the first year of the project is expected to be roughly $8,100,000, with approximately $18,600,000 available over three years if the team meets its goals.

Greenray - Development of an AC module system. This team will design and develop a high-powered, ultra-high-efficiency solar module that contains an inverter, eliminating the need to install a separate inverter and facilitating installation by homeowners. Research will focus on increasing the lifetime of the inverter. Partners include Sanyo, Tyco Electronics, Coal Creek Design, BluePoint Associates, National Grid, and Sempra Utilities. Subject to negotiations, DOE funding for the first year of the project is expected to be roughly $400,000, with approximately $2,300,000 available over three years if the team meets its goals.

Konarka - Building-integrated organic photovoltaics. This project will focus on manufacturing research and product reliability assurance for extremely low-cost photovoltaic cells using organic dyes that convert sunlight to electricity. Partners for this project include NREL and the University of Delaware. Subject to negotiations, DOE funding for the first year of the project is expected to be $1,200,000, with approximately $3,600,000 available over three years if the team meets its goals.

Miasole - Low-cost, scalable, flexible PV systems with integrated electronics. This project will develop high-volume manufacturing technologies and PV component technologies. Research will focus on new types of flexible thin-film modules with integrated electronics and advances in technologies used for installation and maintenance. Project partners include Exeltech, Carlisle SynTec, Sandia National Laboratories, NREL, the University of Colorado, and the University of Delaware. Subject to negotiations, DOE funding for the first year of the project is expected to be $5,800,000, with approximately $20,000,000 available over three years if the team meets its goals.

Nanosolar - Low-cost, scaleable PV systems for commercial rooftops. This project will work on improved low-cost systems and components using thin-film PV cells for commercial buildings. Research will focus on large-area module deposition, inverters, and mounting. Partners include SunLink, SunTechnics, and Conergy. Subject to negotiations, DOE funding for the first year of the project is expected to be roughly $1,100,000, with approximately $20,000,000 available over three years if the team meets its goals.

Powerlight - PV cell-independent effort to improve automated manufacturing systems. This project will focus on reducing non-cell costs by making innovations with automated design tools and with modules that include mounting hardware. Partners include Specialized Technology Resources and Autodesk. Subject to negotiations, first-budget period funding for this project is expected to be

approximately $2,800,000, with approximately $6,000,000 available over three years if the team meets its goals.

Practical Instruments - Low-profile high-concentration PV systems for rooftop applications. This project will explore a novel concept for low-profile high-concentration optics to increase the output of rooftop PV systems. The project will also explore designs using multi-junction cells to allow for very high efficiency modules. Project partners include Spectrolab, Sandia National Laboratories, SunEdison, and the Massachusetts Institute of Technology. Subject to negotiations, funding for the first year of the project is expected to be roughly $2,200,000, with approximately $4,000,000 available over three years if the team meets its goals.

SunPower - Grid-competitive residential solar power generating systems. This project will research lower-cost ingot and wafer fabrication technologies, automated manufacture of back-contact cells, and new module designs, to lower costs. Project partners include Solaicx, the Massachusetts Institute of Technology, NREL, and Xantrex. Subject to negotiations, first-budget period funding for this project is expected to be approximately $7,700,000, with approximately $17,900,000 available over three years if the team meets its goals.

United Solar Ovonic - Low-cost thin-film building-integrated PV systems. This project will focus on increasing the efficiency and deposition rate of multi-bandgap, flexible, thin-film photovoltaic cells and reducing the cost of inverters and balance-of-system components. Partners include SMA America, Sat Con Technology Corporation, PV Powered, the ABB Group, Solectria Renewables, Developing Energy Efficient Roof Systems, Turtle Energy, Sun Edison, the University of Oregon, Syracuse University, the Colorado School of Mines, and NREL. Subject to negotiations, funding for the first year of the project is expected to be roughly $2,400,000, with approximately $19,300,000 available over three years if the team meets its goals.

For more information on the solicitation and facts about the Solar America Initiative, visit: http://www.eere.energy.gov/solar/solar_america/ (http://www.eere.energy.gov/solar/solar_america/) .

The Energy Policy Act of 2005 (EPAct), signed by the President in August of 2005, provides incentives for purchasing and using solar equipment. Now extended through 2008, these incentives could provide a credit equal to 30 percent of qualifying expenditures for purchase of commercial solar installations, with no cap on the total credit allowed. EPAct also provides a 30 percent tax credit for qualified PV property and solar water heating property used exclusively for purposes other than heating swimming pools and hot tubs. Private property owners of qualified property could be eligible for a credit up to $2,000 for either property, with a maximum of $4,000 allowed, if both photovoltaic and solar hot water qualified properties are installed. More information on available incentives for solar installations is available at: http://energystar.gov/index.cfm?c=products.pr_tax_credits (http://energystar.gov/index.cfm?c=products.pr_tax_credits) .

Fact Sheets (/media/SolarAmericaFactSheetFinal.pdf)

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