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PRESS RELEASE

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CPUC APPROVES FIRST ROUND OF GRANTS FOR THE CALIFORNIA SOLAR INITIATIVE RD&D PROGRAM

SAN FRANCISCO, March 11, 2010 – The California Public Utilities Commission (CPUC) today approved eight grants totaling up to \$9.3 million in funding for the California Solar Initiative (CSI) Research, Development, Deployment, and Demonstration (RD&D) Program’s first grant solicitation, which focused on integration of photovoltaics (PV) into the utility grid. These eight grant recipients will bring over \$6 million in matching funding to their projects from other funding sources.

The CSI RD&D program will invest \$50 million to fund solar research and demonstration projects that will measurably reduce the cost and accelerate the installation of solar and other distributed technologies that could employ solar for generation, storage, or that could reduce the use of natural gas.

“The California Solar Initiative is one of the greatest focused efforts to promote solar photovoltaics ever seen and is designed to help build a sustainable solar industry. Integrating substantial amounts of PV into the grid is part of that vision,” said CPUC President Michael R. Peevey. “The research projects approved today will remove barriers and provide key insights into how we can efficiently use the energy from PV being produced on a million solar roofs.”

The CSI RD&D Program is administered by Itron, Inc., as Program Manager, under the oversight of the CPUC. The CSI RD&D Program has a budget of \$50 million, running through 2016. The projects funded today are expected to be completed within two years.

A second round of CSI RD&D grant solicitation, issued in November 2009, focused on improved PV production technologies and innovative business models. Proposals submitted in response to the second solicitation are currently under review, and the awardees are expected to be announced in mid-2010.

The CPUC approved grants for the following projects:

1. High Penetration PV Initiative by Sacramento Municipal Utility District (SMUD), in partnership with the Hawaiian Electric Company, will demonstrate and test new hardware and software tools that will provide communication and management between PV systems and utility controls using advanced metering infrastructure (AMI). The tools will be tested and validated at residential, commercial, and utility-scale deployments in California and Hawaii. The project aims to provide utilities and the industry with practical tools that will help integrate increased levels of PV into the grid in beneficial ways. The project will receive up to \$2,968,432 in CSI RD&D grant funding and contribute \$1,293,259 in match funding.

2. Advanced Modeling and Verification for High Penetration PV by Clean Power Research (CPR) will develop a free solar resource model that builds upon an existing PV performance model platform to enhance the resolution of satellite-based resource data. The team will integrate PV modeling capabilities with an open-source distribution engineering and analysis tool and create a unique PV value assessment tool for use by utilities to select and target the best PV locations. These tools and data streams will be made publicly available for use by California installers, manufacturers, agencies, utilities, and others engaged in the transformation of the electric power grid into a clean energy marketplace. The project team includes National Renewable Energy Laboratory (NREL), State University of New York, New York State Energy Research and Development Authority, Solar Electric Power Association, SMUD, Long Island Power Authority, Salt River Project, and the New York Power Authority. The project will receive up to \$976,392 in CSI RD&D grant funding and contribute \$2,293,000 in match funding.

3. Beopt-CA (EX): A Tool for Optimal Integration of Energy Efficiency, Demand Response, Energy Storage, and PV for California Homes by NREL targets the development of the Building Energy Optimizer for California Existing Homes (Beopt-CA (EX)) modeling tool that aims to facilitate balanced integration of energy efficiency, demand response, and energy storage with PV in the residential retrofit market. The project will use PG&E and SunPower data to validate the prototypes developed in the modeling tool. The project team includes Pacific Gas and Electric Company (PG&E), Davis Energy Group, Energy and Environmental Economics (E3), and SunPower Corporation. The project will receive up to \$985,000 in CSI RD&D grant funding and contribute \$329,000 in match funding.

4. Specify, Test and Document an Integrated Energy Project Model by kW Engineering focuses on developing and verifying an Integrated Energy Project (IEP) software model that will help identify best practices for integrating energy efficiency measures with PV system deployment. The IEP model will be built using a building energy analysis protocol and is intended to streamline the process of integrating energy efficiency and PV, thereby reducing time and costs for both consumers and contractors. The project team includes SolarNexus and Endependence (dba

SaveEnergy123). The project will receive up to \$942,500 in CSI RD&D grant funding and contribute \$250,000 in match funding.

5. Analysis of High-Penetration Levels of PV into the Distribution Grid in California by National Renewable Energy Laboratory (NREL) focuses on accelerating the placement of high levels of PV penetration into the existing distribution circuits and identifying new circuit configurations that will help increase penetration levels of PV. For the first year of this project, the NREL team will conduct modeling, simulations, and testing of possible advanced hardware and software solutions. Laboratory testing will be conducted on advanced inverters and control systems, and these advanced systems will be installed in projects in the Southern California Edison territory. During the second year, the team will evaluate the advanced technologies that were developed during the first year of the project. The project team includes Southern California Edison, Clean Power Research, Electrical Distribution Design, and Satcon. The project will receive up to \$1,600,000 in CSI RD&D grant funding and contribute \$1,400,000 in match funding.

6. Development and Analysis of a Progressively Smarter Distribution System by the University of California, Irvine (UCI) is a collaboration between the Advanced Power and Energy Program (APEP) at UCI and PG&E. The goals of the project are to utilize modeling and simulation to quantify PV integration limitations; and to develop and evaluate progressively smarter distribution systems. Results from the project will be used to inform standards work critical to widespread adoption of higher penetration PV. The project will receive up to \$300,000 in CSI RD&D grant funding and contribute \$100,000 in match funding.

7. Planning and Modeling for High-Penetration PV by SunPower Corporation will produce an improved solar resource model with temporal resolution ranging from 10 minutes to 1 second and spatial resolution going to below 4 km². Results of the higher solar resolution data will be validated against PV systems monitored by SunPower in California. The emphasis of this project is to produce the tools and resources necessary to facilitate the study of high penetration PV scenarios in California using industry-standard simulation tools, and it will provide critical information to utility and grid operation planners about solar resource variation and PV plant behavior under both stable and variable conditions. The project team includes AWS Truewind, Sandia National Laboratories, KEMA, and the California Independent System Operator (ISO). The project will receive up to \$1,000,000 in CSI RD&D grant funding and contribute \$320,000 in match funding.

8. Improving Economics of Solar Power Through Resource Analysis, Forecasting and Dynamic System Modeling by the University of California, San Diego (UCSD) will research the economic effects of three issues associated with increased penetration of PV in California: 1) insolation data and PV performance that take into account passing cloud cover; 2) how inverter logic software can improve voltage regulation in transient light conditions due to passing clouds; and, 3) energy storage options to reduce voltage sag due to cloudiness. The University of California at San Diego team is composed of representatives from the Electric Power Research Institute, EDSA Power Analytics, the ISO, and San Diego Gas and Electric Company. The project will receive up to \$548,148 in CSI RD&D grant funding and contribute \$137,037 in match funding.

The proposal voted on is available at

http://docs.cpuc.ca.gov/PUBLISHED/AGENDA_RESOLUTION/114691.htm.

For more information on the CSI RD&D Program, please visit www.CalSolarResearch.ca.gov.

For more information on the CPUC, please visit www.cpuc.ca.gov.

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