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PRESS RELEASE

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

SAN FRANCISCO, September 2, 2010 – The California Public Utilities Commission (CPUC) today approved nine grants totaling up to $14.6 million in funding for the California Solar Initiative (CSI) Research, Development, Deployment, and Demonstration (RD&D) Program's second grant solicitation, which focused on improved photovoltaic (PV) production technologies and innovative business practices. These nine grant recipients are expected to have matching funds of over $13 million for their projects from other funding sources.

"The California Solar Initiative RD&D Program continues to attract unique and innovative projects in the area of solar photovoltaic development," said CPUC President Michael R. Peevey. "In this second round of grants, we look to further advance the technology along with the development of positive and successful business practices in the solar industry."

The CSI RD&D Program is administered by Itron, Inc., as Program Manager, under the oversight of the CPUC. With a budget of $50 million running through 2016, the CSI RD&D Program awarded $9.3 million for the first round of grants issued in March of 2010. Today's grants bring the total amount of PV projects funded by the CSI RD&D Program to $23.9 million. The goal of the program is to fund research, development, demonstration, and deployment of solar technologies that will measurably reduce the cost and accelerate the installation of technologies that employ solar energy to generate or store of electricity or to reduce the use of natural gas.

The CPUC today approved grants for the following projects:

Focus Area I: Improved PV production technologies

1.
PV and Advanced Energy Storage for Demand Reduction by SunPower Corporation. The overall goal of this project is to demonstrate that the integration of PV and energy storage will be of higher value than either technology alone. The project includes tasks to increase demand reduction and verify benefits of solar coupled with storage, and also assess the reliability and performance of three different storage technologies. The storage options to be evaluated include an innovative ice energy storage with the other two being traditional batteries. This research will undertake the following: 1) Determine if the combined value of PV and

energy storage is of higher value to the commercial customer and utility than either one alone, and, 2) Assess storage capabilities, reliability and potential degradation of the technologies to assess lifetime characteristics. Target stores are a team partner and will provide the demonstration sites for this project. The project will receive $1,875,000 in CSI RD&D grant funding with a matching fund of $937,000.

2.
Improved Cost, Reliability, and Grid Integration of High Concentration Photovoltaic Systems by Amonix will monitor the performance of nine 53 kW High Concentration Photovoltaic (HCPV) units and associated circuits on the UC Irvine electric infrastructure to evaluate and compare grid interconnection and energy management strategies. This project will also conduct accelerated testing and field data to develop a method to evaluate the reliability and lifetime of HCPV technologies. These advancements are expected to facilitate the evolution of HCPV to become cost competitive with other large scale and distributed solar technologies. The project will receive $2,139,384 in CSI RD&D grant funding with a matching fund of $3,157,000.

3. Proving Performance of the Lowest Cost PV System by the Solaria Corporation seeks to overcome the primary obstacle to wide-scale deployment of their PV technology in that the financial community will only invest in projects that use solar technology with a history of proven performance. To overcome this barrier, the Solaria team proposes to conduct demonstrations at two California fairground sites (Hollister and Stockton). The Stockton demonstration will be a 250 kW "kit" system that will reduce costs by eliminating customization as much as possible to produce a turnkey tracking PV system. The other three systems, installed in Hollister, will test and compare three types of tracking systems with Solaria modules: single axis, dual axis, and polar axis. These tests will allow for further cost and performance comparisons to validate the optimum tracker technology with Solaria modules. The data and results from these demonstrations will reduce the risk for investors to provide financing to these projects. This will help to accelerate the deployment of solar in the state. The project will receive $1,217,500 in CSI RD&D grant funding with a matching fund of $1,217,500.

Focus Area II: Innovative business models

4.

Innovative Business Models, Rates and Incentives that Promote Integration of High Penetration PV with Real-Time Management of Customer Sited Distributed Energy Resources by Viridity Energy.
This project builds upon high penetration PV research funded from the first CSI RD&D solicitation and also leverages prior University of California, San Diego (UCSD) and San Diego Gas and Electric Company (SDG&E) related work. The Viridity team will identify business models for integration of up to 1,000 megawatts of high penetration PV with distributed energy resource (DER) management at UCSD. The team will also identify and develop tariffs and incentives that will promote the integrated operation of promising DER technologies and PV integration strategies, vet these tariffs with SDG&E and the California Independent System Operator (ISO), and modify as appropriate. The PV integration and DER management strategies will be tested and demonstrated on the UCSD Microgrid. The team will also perform integrated cost-benefit analysis of these innovative DER business models and management strategies and recommend rates and incentives that balance costs and benefits. Results will be disseminated in the form of a final report and an open source spreadsheet tool for use at individual customer sites and with implementing statewide policy. The project will receive $1,660,000 in CSI RD&D grant funding with a matching fund of $840,000.

5.

Low-Cost, Smart-Grid Ready Solar Re-Roof Product Enables Residential Solar Energy Efficiency Results by ConSol will demonstrate a low cost "plug and play" roof mounting PV system directed to the asphalt-shingle re-roofing market. The project is designed to coordinate the installation of PV along with asphalt roofing materials by standard roofers and electrical contractors with no special tools. Because the PV installation is done without penetrations in the roof, the 20-year warranty covers both the roof and the PV system. Demonstrations will be conducted on six homes in SDG&E's service area. SDG&E will support the project by assisting with identifying demonstration homes, modeling zero energy packages, and contributing to the cost of the energy efficiency upgrades. The project will receive $1,000,000 in CSI RD&D grant funding with a matching fund of $1,160,697.

Projects that address both Focus Area I and Focus Area II:

6.

West Village Energy Initiative by Regents of the University of California will focus on both improving PV technology and demonstrating innovative business models in solar community settings. The University of California, Davis team will test and demonstrate existing

and new energy storage technologies that are able to work with smaller scale systems in community wide installations. The team will research and demonstrate the integration of advanced metering infrastructure with PV and distributed energy resources, which will lead to a set of standards that can help accelerate the use of advanced metering infrastructure with PV. Hybrid solar (PV/Thermal) will be tested and demonstrated in the context of a fully integrated net-zero community energy system. UC Davis will use the West Village Project to "test case" and evaluate several business models for deploying community distributed solar. Additionally, the team will test, demonstrate, and assess virtual net metering approaches, energy storage to mitigate the impacts of high penetration PV deployment, and the use of solar resource forecasting to optimize storage charging and dispatch. The University of California is striving to make the West Village Project one of the first large scale communities to be zero net energy entirely through energy efficiency and on-site generation. The project will receive $2,500,000 in CSI RD&D grant funding with a matching fund of $1,245,000.

7. Advanced Grid-Interactive Distributed PV and Storage by Solar City. The goal of this project is to create a firm, dispatchable, grid-interactive product that combines PV and storage that can be installed in distributed, small increments in a utility-wide network. The product will combine Tesla Motors vehicle battery system with Solar City's SolarGuard dispatch and monitoring platform. An early step in the project is to deploy six combination PV and battery systems using off the shelf battery technology to establish a cost and performance baseline and to refine the communication and control system. Using the test and performance data from these initial installations, the team will then integrate the Tesla lithium-ion high-voltage battery pack with the grid interactive inverter, changer and PV system and conduct a demonstration at six additional sites. The team will also assess the performance as well as the economic, reliability, and carbon avoidance impacts of a large-scale deployment of firmed PV. Lastly, Solar City will explore a range of financing options that will best enable firmed PV deployment. The project will receive $1,774,780 in CSI RD&D grant funding with a matching fund of $1,057,187.

8. Reducing California PV Balance of System Costs by Automating Array Design, Engineering and Component Delivery by SunLink. SunLink will build on past research to enable automation of structural and array electrical design as well as automated preparation of documentation of project approval and installation. This new automation will help the industry to cost-effectively provide optimized designs for smaller PV systems down to 5 kW. This automation will also expand the range of contractors who can successfully install fully-engineered PV

installations, including general and electrical contractors. The four objectives of the research are to 1) reduce the time for PV array design, 2) reduce the time required for project permitting, 3) enable fully optimized designs for smaller commercial roof-top systems, and 4) decrease "on-roof" time through factory manufacturing of array harnesses and matching combiner boxes. The project will receive $996,269 in CSI RD&D grant funding with a matching fund of $927,031.

9. Improved manufacturing and innovative business models to accelerate commercialization in California of hybrid concentrating photovoltaic/thermal tri-generation (CPV/T-3G) technology by Cogenra Solar. Cogenra Solar (formerly known as Skywatch Energy, Inc.) has developed, prototyped and validated the technical performance of an innovative concentrating photovoltaic/thermal co-generation technology and will conduct an 80 kW demonstration at the Sonoma Wine Company. For this project, the field performance of the system will be measured and used to refine economic and financing models and optimization over multiple tariff structures. This project will also look at modifying the co-generation system so that it can support tri-generation of electricity, heating and cooling, expanding the market to include commercial sites that require cooling and lower amounts of hot water. Additionally, Cogenra Solar will modify the system to provide energy storage for use during peak demand and coordination with Pacific Gas and Electric Company on grid integration. The project will receive $1,467,125 in CSI RD&D grant funding with a matching fund of $2,774,157.

The proposal voted on is available at http://docs.cpuc.ca.gov/PUBLISHED/COMMENT_RESOLUTION/121571.htm

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

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

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