

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



NOTICE OF PROPOSED AWARD (NOPA)
Advancing Utility-Scale Clean Energy Generation
Grant Solicitation PON-13-303
September 26, 2014

On May 15, 2014, the California Energy Commission's Electric Program Investment Charge (EPIC) Program released a Program Opportunity Notice (PON) titled "Advancing Utility-Scale Clean Energy Generation" (PON-13-303). The PON announced that \$9,500,000 in grant funding was available to fund applied research and development (ARD) projects to improve utility-scale renewable energy generation, with a focus on the following project groups:

- 1. Thermal Energy Storage for Concentrating Solar Power** – sought proposals to develop new and enhanced tools and technologies that improve the cost and efficiency of thermal energy storage, leading to increased capacity and dispatchability of concentrating solar power and improved understanding of grid benefits.
- 2. Solar and Wind Forecasting and Modeling** – sought proposals to develop and validate advanced solar and wind forecasting and modeling tools to increase the accuracy and reliability of forecasts, reduce the costs of solar and wind generation integration for utilities, and assist grid operators in variable and intermittent resource management.
- 3. Geothermal Energy Generation Facilities** – sought proposals to increase the efficiency and extend the operating life of existing geothermal energy generation facilities by improving reservoir management techniques and system design, and enhancing grid support through flexible generation and ancillary services.

The Energy Commission received eighteen proposals by the due date of July 22, 2014. The proposals were screened, reviewed, evaluated, and scored using the criteria described in the PON. Based on the scores determined by the evaluation committee and requested funding levels, the Energy Commission has augmented the funding total with an additional \$495,832 in EPIC funding to award a total of \$9,995,832 and fully fund seven out of twelve passing projects under this solicitation. Awards are recommended as follows:

- For project group 1, "Thermal Energy Storage for Concentrating Solar Power," two projects are recommended for funding for a total of \$2,997,024. Eight proposals were received, of which five received a passing score.
- For project group 2, "Solar and Wind Forecasting and Modeling," four projects are recommended for funding for a total of \$3,998,808. Eight proposals were received, of which six received a passing score.

- For project group 3, “Geothermal Energy Generation Facilities,” one project is recommended for funding for a total of \$3,000,000. Two proposals were received, of which one received a passing score.

This Notice of Proposed Awards is being issued pursuant to those recommendations.

The attached table titled “Notice of Proposal Awards and Results of Submitted Proposals” identifies: each of the applicants recommended to receive funding, the project title, the recommended amount of Energy Commission funding, and scoring information.

Funding of proposed projects resulting from this solicitation is contingent upon the approval of these projects at a publicly noticed Business Meeting at the Energy Commission in Sacramento, California, and execution of a grant agreement. If the Commission is unable to negotiate and execute an agreement with an Applicant in a timely manner, the Commission, at its sole discretion, reserves the right to cancel the pending award and shift the available funds. The Energy Commission also reserves the right to allocate any additional funds to passing applications, in rank order, if further funding becomes available. Applicants will be notified of any such changes in a revised notice.

This notice is being mailed to all parties who submitted a proposal to this solicitation and is also posted on the Energy Commission’s website at: <http://www.energy.ca.gov/contracts>.

For further information about this matter, contact Angela Hockaday at (916) 654-5186, Angela.Hockaday@energy.ca.gov.

California Energy Commission

PON-13-303



Notice of Proposed Awards and Results of Submitted Proposals
Advancing Utility-Scale Clean Energy Generation
Project Group 1 - Thermal Energy Storage for Concentrating Solar Power
Friday, September 26, 2014

Rank	Prime Applicant	Title	EPIC Funds Requested	EPIC Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Project Group 1							
1	Halotechnics Inc.	Systems Integration of Containerized Molten Salt Thermal Energy Storage in Novel Cascade Layout	\$1,500,000	\$1,500,000	\$19,038	83.7	Awardee
2	University of California, Los Angeles	Low-Cost Thermal Energy Storage for Dispatchable Concentrating Solar Power	\$1,497,024	\$1,497,024	\$300,000	83.1	Awardee
Total Funding Recommended			\$2,997,024	\$2,997,024	\$319,038		
Passed But Not Funded							
3	Sandia National Laboratories	Optimization and Analysis Toolkit [OAT]: For Integration and Configuration of Concentrating Solar Power-Thermal Energy Storage [CSP-TES]	\$1,250,000	\$0	\$200,000	76.3	Finalist
4	Terrafore Technologies, LLC	EPCM - TES: Demonstration of An Encapsulated Phase Change Material Thermal Energy Storage	\$1,497,051	\$0	\$58,724	72.9	Finalist
5	Lawrence Livermore National Security, LLC	Optimal Design of Concentrating Solar Power Thermal Energy Storage Systems	\$1,412,838	\$0	\$86,907	71.7	Finalist
Did Not Pass							
6	Sandia National Laboratories	DualMH: A Two-Stage Metal Hydride System for Thermochemical Energy Storage	\$959,525	\$0	\$0	Did Not Pass	Did Not Pass
7	Otherlab, Inc.	Integrated Receiver/Storage for Hybrid CSP Plant	\$820,265	\$0	\$613,110	Did Not Pass	Did Not Pass
8	University of California, Davis Energy Institute	Modeling, Optimization, and Design of Hybrid CSP-Geothermal Power Plant with Thermal Energy Storage Through Enhanced Geothermal Systems for California	\$1,161,802	\$0	\$0	Did Not Pass	Did Not Pass

**California Energy Commission
PON-13-303**



**Notice of Proposed Awards and Results of Submitted Proposals
Advancing Utility-Scale Clean Energy Generation
Project Group 2 - Solar and Wind Forecasting and Modeling**

Friday, September 26, 2014

Rank	Prime Applicant	Title	EPIC Funds Requested	EPIC Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Project Group 2							
1	The Regents of the University of California; University of California, San Diego	Solar Forecast Based Optimization of Distributed Energy Resources in the LA Basin and UC San Diego Microgrid	\$999,984	\$999,984	\$999,984	88.0	Awardee
2	Itron, Inc.	Improving Solar & Load Forecasts: Reducing the Operational Uncertainty Behind the Duck Chart	\$998,926	\$998,926	\$450,000	83.6	Awardee
3	The Regents of the University of California; University of California, San Diego	High-Fidelity Solar Power Forecasting Systems for the 392 MW Ivanpah Solar Plant (CSP) and the 250 MW California Valley Solar Ranch (PV)	\$999,898	\$999,898	\$764,019	83.3	Awardee
4	University of California, Davis	Improving Short-Term Wind Power Forecasting Through Measurements and Modeling of the Tehachapi Wind Resource Area	\$1,000,000	\$1,000,000	\$90,325	79.3	Awardee
Total Funding Recommended			\$3,998,808	\$3,998,808	\$2,304,328		
Passed But Not Funded							
5	Electricore, Inc.	Development, Demonstration, and Application of Advanced Micro-Climate Marine Layer Forecast Tool to Improve Solar and Load Forecast Accuracy, and Increase the Value of Energy Storage and Other Preferred Resources within SCE Service Territory	\$1,000,000	\$0	\$479,474	77.5	Finalist
6	Forecast Energy, Inc.	Hunters Point Community Microgrid	\$1,000,000	\$0	\$500,000	76.4	Finalist
Did Not Pass							
7	Lawrence Berkeley National Laboratory	Managing Known Unknowns: Incorporating Uncertainty in Wind and Solar Forecasts to Optimize Operational Decisions	\$1,000,000	\$0	\$0	Did Not Pass	Did Not Pass
8	Cal State L.A. University Auxiliary Services, Inc.	Distributed HPC Clusters for Weather Forecasting and Its Application to Microgrids and Local Power Generation from Renewable Resources	\$882,775	\$0	\$0	Did Not Pass	Did Not Pass

**California Energy Commission
PON-13-303**

**Notice of Proposed Awards and Results of Submitted Proposals
Advancing Utility-Scale Clean Energy Generation
Project Group 3 - Geothermal Energy Generation Facilities
Friday, September 26, 2014**



Rank	Prime Applicant	Title	EPIC Funds Requested	EPIC Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Project Group 3							
1	Geysers Power Company, LLC	Investigating Flexible Generation Capabilities at the Geysers	\$3,000,000	\$3,000,000	\$3,000,000	83.5	Awardee
Total Funding Recommended			\$3,000,000	\$3,000,000	\$3,000,000		
Did Not Pass							
7	University of California, Davis	Technical and Economic Market Analysis for Developing Flexible Geothermal Resources in California	\$1,000,000	\$0	\$90,325	Did Not Pass	Did Not Pass