

CALIFORNIA ENERGY COMMISSION

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**NOTICE OF PROPOSED AWARD (NOPA)****Solar +: Taking the Next Steps to Enable Solar as a Distribution Asset
GFO-16-309
March 21, 2017**

On November 21, 2016, the California Energy Commission (Energy Commission) released a competitive solicitation to fund applied research and development and technology demonstration and deployment projects that will advance the deployment and grid integration of distributed solar resources through the use of energy storage, smart inverters, and advanced forecasting and modeling techniques. Up to \$26,000,000 in Electric Program Investment Charge (EPIC) funding is available to fund applications in:

- Group 1: Pilot Demonstration of Advanced Solar + Storage Technologies for Community-Scale Applications
- Group 2: Pilot Demonstration of Advanced Solar + Storage Technologies for Building-Scale Applications
- Group 3: Enhanced Modeling Tools to Maximize Solar + Storage Benefits
- Group 4: Advanced Smart Inverter Capabilities to Support High-Penetration Solar
- Group 5: Holistic Forecasting to Support High-Penetration Solar Grid Operations
- Group 6: Energy Storage Deployment to Facilitate Storage Interconnection and Enable Integration of High-Penetration Distributed Solar

The Energy Commission received 35 proposals by the due date of January 31, 2017. Each proposal was screened, reviewed, evaluated and scored using the criteria in the solicitation. 31 proposals passed the Stage One Application Screening.

The attached "Notice of Proposed Awards" identifies each applicant selected and recommended for funding by Energy Commission staff and includes the recommended funding amount and score. The total amount recommended is \$22,768,717.

Funding of proposed projects resulting from this solicitation is contingent upon the approval of these projects at a publicly noticed Energy Commission Business Meeting and execution of a grant agreement. If the Energy Commission is unable to timely negotiate and execute a funding agreement with an Applicant, the Energy Commission, at its sole discretion, reserves the right to cancel or otherwise modify the pending award, and award the funds to another applicant.

In addition, the Energy Commission reserves the right to: 1) add to, remove, or shift funding between the different groups if there are insufficient passing proposals in one group and 2) negotiate with successful applicants to modify the project scope, schedule, and/or level of funding.

This notice is being mailed to all parties who submitted an application to this solicitation and is also posted on the Energy Commission's website at: www.energy.ca.gov/contracts/.

For information, please contact Janna Franks at Janna.Franks@energy.ca.gov or 916- 654-4921.

Janna Franks
Commission Agreement Officer



California Energy Commission

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Solar +: Taking the Next Steps to Enable Solar as a Distribution Asset

Project Group 1 – Pilot Demonstration of Advanced Solar + Storage Technologies for Community-Scale Applications

Notice of Proposed Awards

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Electric Power Research Institute	Integrated Community-Level Solutions for Resource Management for Grid and Customer Benefits	\$2,976,991	\$2,976,991	\$1,002,900	90	Awardee
2	Center for Sustainable Energy	Integrated Community Solar and Storage at a Low Income Mobile Home Park: Demonstrating Optimized Utility Rates and Storage Control Algorithms	\$2,707,045	\$2,707,045	\$350,214	89	Awardee
3	The Regents of the University of California, Riverside	Advanced Integrated Building Energy Management Technology Demonstration in a Permanent Supportive Housing Facility	\$2,110,657	\$2,110,657	\$277,707	87	Awardee
Total Funding Recommended			\$7,794,693	\$7,794,693	\$1,630,821		



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Project Group 1 – Pilot Demonstration of Advanced Solar + Storage Technologies for Community-Scale Applications

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Passed but Not Funded							
4	Board of Trustees of the Leland Stanford Junior University (SLAC National Accelerator Laboratory)	SOLDER: Smart Operations of Loads and Distributed Energy Resources	\$3,000,000	\$0	\$606,023	84	Finalist
5	The Regents of the University of California, Los Angeles	Integrated Energy Unit (IEU) Network for Community-Scale Solar and Battery System	\$2,541,318	\$0	\$232,500	84	Finalist
Total			\$5,541,318	\$0	\$838,523		



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Project Group 1 – Pilot Demonstration of Advanced Solar + Storage Technologies for Community-Scale Applications

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Did Not Pass							
	Golden Rain Foundation	Laguna Woods Village Solar + Project	\$3,000,000	\$0	\$4,100,000		Did Not Pass
	The Regents of the University of California, Los Angeles	Combining High Temperature Hybrid-CAES with PV for electricity, heating, and cooling in low-income housing community	\$2,998,016	\$0	\$0		Did Not Pass
	San Juan Mining Corporation	The San Juan Ridge Mine Solar + Project: A Rural Community-Scale Demonstration Application to Advance Renewable Energy in California	\$2,207,234	\$0	\$777,578		Did Not Pass
	Wendel Energy Operations, LLC	Integrating Concentrated Solar Power with Geothermal to Provide Dispatchable Power	\$1,964,076	\$0	\$1,500,000		Did Not Pass
Total			\$10,169,326	\$0	\$6,377,578		
Disqualified							
	Intrepid Engineering Group	Solar Heat Steam Generator	\$3,000,000	\$0	\$0		Disqualified
Total			\$3,000,000	\$0	\$0		
Grand Total			\$26,505,337	\$7,794,693	\$8,846,922		



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Project Group 2 – Pilot Demonstration of Advanced Solar + Storage Technologies for Building-Scale Applications

Notice of Proposed Awards

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Electric Power Research Institute	Integrated Building-Scale Solar + Storage Advanced Technologies Maximizing Value to Customer and the Distribution Grid	\$1,491,764	\$1,491,764	\$255,564	92	Awardee
2	Humboldt State University Sponsored Programs Foundation	Scaling Solar+ for Small and Medium Commercial Buildings	\$1,500,000	\$1,500,000	\$341,642	87	Awardee
Total Funding Recommended			\$2,991,764	\$2,991,764	\$597,206		
Passed but Not Funded							
3	The Regents of the University of California, Davis	Pilot demonstration of Integrated solar-battery hybrid system	\$1,499,627	\$0	\$188,420	85	Finalist
4	Gridscape Solutions, Inc.	La Entrada Zero Net Energy School & Solar Emergency Microgrid	\$1,498,000	\$0	\$904,801	83	Finalist
5	ZipPower, Inc.	Scaling Solar + Storage Systems: DER as a Grid Asset	\$1,422,650	\$0	\$0	79	Finalist
Total			\$4,420,277	\$0	\$1,093,221		



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Project Group 2 – Pilot Demonstration of Advanced Solar + Storage Technologies for Building-Scale Applications

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Did Not Pass							
	The Regents of the University of California, Los Angeles	Grid Inegration of Solar Photovoltaic System Through a Battery Storage System and a Real Time Predictive and Cooperative Energy Management Framework	\$1,498,939	\$0	\$172,500		Did Not Pass
Total			\$1,498,939	\$0	\$172,500		
Disqualified							
	Gennady Medvedkin	Solar panel improvement by design and development of cover glass perfection	\$1,412,800	\$0	\$0		Disqualified
	Wooster Engineering, Inc.	An Advanced "Solar + Storage" Solution for Sonoma Valley High School	\$1,500,000	\$0	\$0		Disqualified
	Micronoc Inc.	Standardized Solar Integrated Modular BTM-ESS with Smart Controller	\$1,000,000	\$0	\$1,000,000		Disqualified
Total			\$3,912,800	\$0	\$1,000,000		
Grand Total			\$12,823,780	\$2,991,764	\$2,862,927		



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Project Group 3 – Enhanced Modeling Tools to Maximize Solar + Storage Benefits

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Energy and Environmental Economics, Inc.	Enhanced Modeling Tools to Maximize Solar + Storage Benefits	\$987,379	\$987,379	\$108,655	91	Awardee
Total Funding Recommended			\$987,379	\$987,379	\$108,655		
Passed but Not Funded							
2	Electric Power Research Institute	Integrated Solar + Storage Analysis Tool: Enabling Streamlined Hosting Capacity and Valuation Analysis of DER Deployment in CA	\$1,000,000	\$0	\$977,616	90	Finalist
Total			\$1,000,000	\$0	\$977,616		
Did Not Pass							
	Opus One Solutions (USA) Corporation	Enhanced Modeling Tools for Distribution Locational Marginal Pricing Based Quantification and Maximization of Solar + Storage Benefits	\$1,000,000	\$0	\$575,517		Did Not Pass
	Clean Power Research, LLC	California DER Valuation Project	\$1,000,000	\$0	\$420,000		Did Not Pass
	HST Solar Farms	Maximizing Value of PV + Storage Systems Through an Online Platform That uses Multi-Dimensional Optimization & Artificial Intelligence	\$1,000,000	\$0	\$300,000		Did Not Pass
Total			\$3,000,000	\$0	\$1,295,517		
Grand Total			\$4,987,379	\$987,379	\$2,381,788		



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 Project Group 4 – Advanced Smart Inverter Capabilities to Support High-Penetration Solar

Notice of Proposed Awards

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Electric Power Research Institute	Impact Assessment and Secure Implementation of California Rule 21 Smart Inverter Functions to Support High PV Penetration	\$2,935,822	\$2,935,822	\$1,659,077	92	Awardee
2	Advanced Microgrid Solutions, Inc.	South Coast AQMD Advanced Smart Inverter Project	\$2,731,862	\$2,731,862	\$2,449,004	92	Awardee
Total Funding Recommended			\$5,667,684	\$5,667,684	\$4,108,081		
Passed but Not Funded							
3	Charge Bliss, Inc.	A Comprehensive Smart Inverter Testing Facility and Pilot Demonstration Project	\$3,000,000	\$0	\$137,143	78	Finalist
4	Gridscape Solutions, Inc.	Smart Grid Connected, Controlled & Secure DER System	\$2,411,500	\$0	\$720,590	78	Finalist
Total			\$5,411,500	\$0	\$857,733		
Did Not Pass							
	Sara Biyabani	Grid Communications for Smart Inverters using SIWG Phase III Functions	\$2,870,759	\$0	\$5,000		Did Not Pass
Total			\$2,870,759	\$0	\$5,000		
Grand Total			\$13,949,943	\$5,667,684	\$4,970,814		



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 Project Group 5 – Holistic Forecasting to Support High-Penetration Solar Grid Operations

Notice of Proposed Awards

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Clean Power Research, LLC	Developing a Comprehensive, System-Wide Forecast to Support High-Penetration Solar	\$750,000	\$750,000	\$320,000	86	Awardee
2	Electric Power Research Institute	Development, Implementation, and Integration of a Holistic Solar Forecasting System for California	\$749,740	\$749,740	\$324,830	85	Awardee
Total Funding Recommended			\$1,499,740	\$1,499,740	\$644,830		
Passed but Not Funded							
3	Sandia National Laboratories	Improving the Value of Renewable Forecasts to Grid Operations: Distributed Forecast Improvements, Applied Metrics, and Meaningful Probabilistic Forecasts	\$750,000	\$0	\$0	77	Finalist
Total			\$750,000	\$0	\$0		
Grand Total			\$2,249,740	\$1,499,740	\$644,830		



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Project Group 6 -- Energy Storage Deployment to Facilitate Storage Interconnection
and Enable Integration of High-Penetration Distributed Solar

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Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Electric Power Research Institute	Enabling PV as a Distribution Asset Through Beneficial Integration of Front- and Behind-the-Meter DERs	\$1,832,770	\$1,832,770	\$591,438	87	Awardee
2	Natural Capitalism Solutions (dba Clean Coalition)	Valencia Gardens Energy Storage	\$1,994,687	\$1,994,687	\$620,470	82	Awardee
Total Funding Recommended			\$3,827,457	\$3,827,457	\$1,211,908		
Did Not Pass							
	USA Microgrids, Inc.	Sonoma County Grid Resiliency	\$1,990,585	\$0	\$785,585		Did Not Pass
Total			\$1,990,585	\$0	\$785,585		
Grand Total			\$5,818,042	\$3,827,457	\$1,997,493		