

CALIFORNIA ENERGY COMMISSION

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www.energy.ca.gov

**NOTICE OF PROPOSED AWARDS (NOPA)****GRANT FUNDING OPPORTUNITY (GFO) GFO-16-306****Addressing Air Quality and Environmental Impacts of Conventional and Emerging Electricity Sector Technologies in a Changing Climate****January 13, 2017**

On September 7, 2016, the California Energy Commission (Energy Commission) released a competitive solicitation to fund projects Applied Research and Development (AR&D) projects that will explore pathways to reduce the environmental, public health, and air quality impacts of the electricity system, develop tools to inform projections of climate change impacts on the energy sector, and analyze the energy efficiency and climate impacts of alternative refrigerants. Up to \$5,200,000 Electric Program Investment Charge (EPIC) funding is available to fund applications in seven project groups:

- **Group 1:** Investigating the Impacts of “Lake Effect” from Solar Energy-Generating Facilities on Avian Behavior
- **Group 2:** Headstart Mitigation Strategy for Desert Tortoises
- **Group 3:** Net Atmospheric Greenhouse Gas Emissions from Forest-Derived Woody Biomass and Field Residues Utilization for Energy Generation
- **Group 4:** Characterization and Measurements of Particulate Matter from Cooling Towers and Plume Modeling
- **Group 5:** Comprehensive Environmental Life Cycle Assessment of Emerging Energy Storage Systems to Identify Barriers and Solutions for their Utility-Scale Deployment
- **Group 6:** Development of Hybrid Downscaling Techniques for Climate Scenario Modeling to Improve Projections for Renewable Sources of Energy and Energy Infrastructure
- **Group 7:** Investigating Alternative Refrigerants for Refrigeration and Space Conditioning

The Energy Commission received fourteen proposals by the due date of November 15, 2016. Each of the submitted proposals was screened, reviewed, evaluated, and scored according to the solicitation’s criteria. All fourteen 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 \$5,692,367.

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 to make additional awards 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 Angela Hockaday at (916) 654-5186 or

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Angela Hockaday

Commission Agreement Officer



California Energy Commission

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Notice of Proposed Award

Project Group 1: Investigating the Impacts of “Lake Effect” from Solar Energy-Generating Facilities on Avian Behavior

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	US Geological Survey	Toward Reducing Wildlife Impacts and Ratepayer Costs of Renewable Energy	\$499,785	\$499,785	\$714,030	93.43	Awardee
Grand Total			\$499,785	\$499,785	\$714,030		



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Project Group 2: Headstart Mitigation Strategy for Desert Tortoises

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Zoological Society of San Diego d/b/a San Diego Zoo Global	Improving Head-Starting Strategies and Conservation Management of Desert Tortoises	\$499,605	\$499,605	\$390,288	87.10	Awardee
2	Regents of the University of California, Davis	Mitigating Impacts of Solar Energy on Desert Tortoises: Indoor Rearing and Release of Headstarted Desert Tortoises	\$493,089	\$493,089	\$333,088	80.45	Awardee
Grand Total			\$992,694	\$992,694	\$723,376		



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Project Group 3: Net Atmospheric Greenhouse Gas Emissions from Forest-derived Woody Biomass and Field Residues Utilization for Energy Generation

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Humboldt State University Sponsored Programs Foundation	California Biopower Impact Project	\$1,000,000	\$1,000,000	\$131,575	85.17	Awardee
Passed But Not Funded							
2	Lawrence Berkeley National Laboratory	Coupling Biogeochemical Modeling and Life-Cycle Assessment to Ensure Sustainable Use of Forest and Field Biomass	\$1,000,000	\$0	\$110,760	78.17	Finalist
3	Spatial Informatics Group, LLC	Net Atmospheric Greenhouse Gas Emissions from Forest-Derived Woody Biomass and Field Residues Utilization for Energy Generation	\$994,658	\$0	\$185,655	77.17	Finalist
Grand Total			\$2,994,658	\$1,000,000	\$427,990		



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Project Group 4: Characterization and Measurements of Particulate Matter from Cooling Towers and Plume Modeling

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	The Regents of the University of California, Davis	Assessing Cooling Tower PM2.5 and PM10 Emissions using Advanced Instrumentation, Plume Transects, and Plume Modeling	\$700,000	\$700,000	\$0	80.25	Awardee
Grand Total			\$700,000	\$700,000	\$0		



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**Project Group 5: Comprehensive Environmental Life Cycle Assessment of Emerging Energy Storage Systems
to Identify Barriers and Solutions for their Utility-Scale Deployment**

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	The Regents of the University of California, Irvine	A Comparative, Comprehensive Life Cycle Assessment of the Environmental and Human Health Impacts of Emerging Energy Storage Technology Development	\$600,000	\$600,000	\$186,219	86.00	Awardee
Passed But Not Funded							
2	Lawrence Berkeley National Laboratory	Environmental Life Cycle Assessment, Barrier Identification and Proposed Solutions for Utility-Scale Deployment of Stationary Energy Storage Systems in California	\$600,000	\$0	\$127,200	83.33	Finalist
3	Electric Power Research Institute	The California Battery Environmental and Economic Analysis and Research (CalBEEAR) Project	\$600,000	\$0	\$184,999	82.17	Finalist
4	The University Corporation-California State University, Northridge	Comprehensive Environmental Life Cycle Assessment of Emerging Energy Storage Systems to Identify Barriers and Solutions for their Utility-Scale Deployment	\$600,000	\$0	\$0	72.00	Finalist
Grand Total			\$2,400,000	\$600,000	\$498,418		



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**Project Group 6: Development of Hybrid Downscaling Techniques for Climate Scenario Modeling
to Improve Projections for Renewable Sources of Energy and Energy Infrastructure**

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	The Regents of the University of California, San Diego	Advanced Statistical-Dynamical Downscaling Methods and Products for California Electricity System Climate Planning	\$1,399,888	\$1,399,888	\$0	88.90	Awardee
Grand Total			\$1,399,888	\$1,399,888	\$0		



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Project Group 7: Investigating Alternative Refrigerants for Refrigeration and Space Conditioning

1/13/2017

Rank Number	Project Applicant	Title	Energy Commission Funds Requested	Energy Commission Funds Recommended	Match Funds	Score	Award Status
Proposed Awards							
1	Lawrence Berkeley National Laboratory	Benefits and Challenges in Deployment of Low GWP A3 Refrigerants in Residential and Commercial Cooling Equipment	\$500,000	\$500,000	\$500,000	84.00	Awardee
Did Not Pass							
2	Air Conditioning, Heating and Refrigeration Technology Institute	Understanding A3 Flammable Refrigerants Leak and Ignition Risk	\$313,608	\$0	\$90,000		Did Not Pass
Grand Total			\$813,608	\$500,000	\$590,000		