

CALIFORNIA ENERGY COMMISSION

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SACRAMENTO, CA 95814-5512
www.energy.ca.gov

**NOTICE OF PROPOSED AWARDS (NOPA)**

**Joint Renewable Energy and Advanced Generation, and Energy-Related Environmental
Research, Development and Demonstration
Grant Solicitation PON-13-502
February 27, 2014**

On October 11, 2013, the California Energy Commission's Public Interest Energy Research (PIER) Natural Gas Program released a Joint Renewable Energy and Advanced Generation/ Energy-Related Environmental Research, Development and Demonstration Program Opportunity Notice (PON-13-502). The PON announced that up to \$5,400,000 in grant funding was available to fund research, development, and demonstration (RD&D) projects on renewable energy, advanced generation, and energy-related environmental research that fall within the following four research areas:

- A. Localized Efficient and Advanced Power and Heat Systems (LEAPS)** – sought proposals that aim to improve the performance and advance the market penetration of distributed generation (DG), combined heat and power (CHP), and combined cooling heating and power (CCHP) systems with the broad objectives of: increasing efficiency; reducing cost and emissions; increasing use of renewable and alternative fuels; and improving the reliability, load factors, and operational flexibility of integrated systems in opportunity areas in the industrial, commercial and residential sectors.
- B. Combined Heat and Power Applications for Associated Gas from Oil and Gas Production Fields** – sought proposals that address the technical and economic challenges to the development and market deployment of DG/CHP systems that use associated gas from oil and gas production fields.
- C. Reliable Power through Accelerated Demonstration and Deployment of Distributed Generation/Combined Heat and Power in Select Southern California Regions** – sought proposals that aim to accelerate the deployment of localized power generation and CHP and to provide reliability support to southern California, particularly the Los Angeles Basin and San Diego areas affected by the closure of the San Onofre Nuclear Generating Station, while addressing the efficient use of natural gas and other local resources.
- D. Air Quality Implications of Using Biogas to Replace Natural Gas** – sought proposals that aim to reduce emissions for the direct use of biogas/biomethane and investigate potential operational issues associated with use of low heating value gas, and post-combustion technologies.

The Energy Commission received twenty five proposals by the due date of December 20, 2013. The proposals were screened, reviewed, evaluated, and scored using the criteria prescribed in the PON. Based on the Review Team's scores and suggested funding level, the Energy Commission proposes to award \$5,400,000 and fund seven out of seventeen passing projects under the solicitation, as follows:

- For Research Area A, "Localized Efficient and Advanced Power and Heat Systems (LEAPS)," two projects are recommended for funding for a total of \$1,596,247. Eight proposals were received, of which four received a passing score.
- For Research Area B, "Combined Heat and Power Applications for Associated Gas from Oil and Gas Production Fields," no proposals were received.
- For Research Area C, "Reliable Power through Accelerated Demonstration and Deployment of Distributed Generation/Combined Heat and Power in Select Southern California Regions," two projects are recommended for full funding and one project recommended for partial funding for a total of \$2,382,085. Five proposals were received, of which four received a passing score.
- For Research Area D, "Air Quality Implications of Using Biogas to Replace Natural Gas," two projects are recommended for funding for a total of \$1,421,668. Twelve proposals were received, of which nine 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 timely negotiate and execute a funding agreement with an Applicant, the Commission, at its sole discretion, reserves the right to cancel the pending award and shift the available funds. Applicants will be notified of 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-13-502



Notice of Proposed Awards and Results of Submitted Proposals
Joint Renewable Energy and Advanced Generation, and Energy-Related Environmental Research,
Development and Demonstration
RESEARCH AREA A - Localized Efficient and Advanced Power and Heat Systems (LEAPS)

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Research Area A							
1	EtaGen Power LLC	High Compression Ratio Free Piston Engine for CHP	\$796,247	\$796,247	\$1,099,580	83.2	Awardee
2	Desert Power, Inc.	Combined Heat and Power System with Multi Function Absorption Cycle	\$800,000	\$800,000	\$860,000	79.1	Awardee
Total Funding Recommended			\$1,596,247	\$1,596,247	\$1,959,580		
Passed But Not Funded							
3	Lawrence Berkeley National Laboratory	Highly Efficient and Clean CHP of Natural Gas/Biogas in a LTC Engine	\$797,700	\$0	\$321,434	76.5	Finalist
4	Pyro-E, LLC	Cost-effective Pyroelectric Energy Harvester for Localized Power Generation	\$299,945	\$0	\$120,000	75.8	Finalist
Did not Pass							
5	AOS Solar Inc.	Converting Waste Carbon Dioxide to Methane & Energy	\$790,000	\$0	\$460,000	Did Not Pass	Did Not Pass
6	Regents of the University of California, Davis	Integrated Combined Heat and Power with Waste Heat Recovery at a Campbell Soup Processing Facility	\$732,647	\$0	\$0	Did Not Pass	Did Not Pass
7	Gas Technology Institute (GTI)	Advanced Generation Renewable Energy Integration Demonstration	\$799,998	\$0	\$445,907	Did Not Pass	Did Not Pass

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Joint Renewable Energy and Advanced Generation, and Energy-Related Environmental Research,
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RESEARCH AREA A - Localized Efficient and Advanced Power and Heat Systems (LEAPS)

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
8	Colony Energy Partners-Tulare LLC	Demonstration of High-Efficiency CHP Plant at the Tulare Anaerobic Co-Digester	\$800,000	\$0	\$1,279,476	Did Not Pass	Did Not Pass

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**Notice of Proposed Awards and Results of Submitted Proposals
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RESEARCH AREA B - Combined Heat and Power Applications for Associated Gas from Oil and Gas Production Fields

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
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No proposals were received under this Research Area

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Notice of Proposed Awards and Results of Submitted Proposals Joint Renewable Energy and Advanced Generation, and Energy-Related Environmental Research, Development and Demonstration

RESEARCH AREA C - Reliable Power through Accelerated Demonstration and Deployment of Distributed Generation/Combined Heat and Power in Select Southern California Regions

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Research Area C							
1	Regents of the University of California	Piloting a Combined Heat and Power Distributed Generation System Powered by Anhydrous Ammonia	\$997,225	\$997,225	\$1,000,000	82.4	Awardee
2	The Regents of the University of California	Low Cost Micro DG/CHP for Use in Laundry Facilities	\$994,307	\$994,307	\$95,000	81.3	Awardee
3*	The Regents of the University of California; University of California, San Diego	Full Monetization of CA Ratepayer Benefits for a Localized, 68% Efficient, Multi-MW Renewable Biogas Fuel Cell and Absorption Chiller CHP System Deployed at UCSD	\$713,006	\$390,553	\$360,000	80.6	Awardee
Total Funding Recommended			\$2,704,538	\$2,382,085	\$1,455,000		
Passed But Not Funded							
4	Eastern Municipal Water District (EMWD)	Reliable Alternative Power Production for Water Reclamation Facilities Throughout Southern California	\$755,040	\$0	\$0	77.7	Finalist
Did not Pass							

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**RESEARCH AREA C - Reliable Power through Accelerated Demonstration and Deployment of Distributed Generation/Combined
Heat and Power in Select Southern California Regions**

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
5	Benz Air Engineering, Co., Inc.	CHP Integration with Industrial Boiler	\$1,200,000	\$0	\$220,000	Did Not Pass	Did Not Pass

*** Project 3 may be awarded the full requested amount if additional funds are made available.**

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Notice of Proposed Awards and Results of Submitted Proposals
Joint Renewable Energy and Advanced Generation, and Energy-Related Environmental Research,
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RESEARCH AREA D - Air Quality Implications of Using Biogas to Replace Natural Gas

February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
Proposed Awards - Research Area D							
1	University of California at Davis	Air Quality Implications of using Biogas (AQIB) to Replace Natural Gas in California	\$775,064	\$775,064	\$70,306	91.6	Awardee
2	CHA Corporation	Pre and Post-Combustion NOx Control For Biogas Engine With Microwave Energy	\$646,604	\$646,604	\$122,554	81.6	Awardee
Total Funding Recommended			\$1,421,668	\$1,421,668	\$192,860		
Passed But Not Funded							
3	Biogas & Electric, LLC	NOxRx - Post Combustion Emission Control Solution for Stationary Biogas Fired Engines	\$888,232	\$0	\$7,000,000	80.7	Finalist
4	The Regents of the University of California	Fuel-Stream Catalyst Trap for Biogas Cleaning	\$350,000	\$0	\$0	79.7	Finalist
5	The Regents of the University of California	Evaluation of Biogas Use in Combustion Systems and Potential Regional Air Quality Impacts	\$999,907	\$0	\$0	79.6	Finalist
6	GC Environmental, Inc.	Air Quality Impacts of the Use of Biogas for Power Generation and Post-Combustion Treatment Approaches	\$1,000,000	\$0	\$0	77.3	Finalist

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February 27th, 2014

Rank	Prime Applicant	Title	PIER Funds Requested	PIER Funds Recommended	Match Funds	Score	Award Status
7	Colony Energy Partners-Tulare LLC	Microbial Pathogens Sampling and Analysis Study at the Tulare Anaerobic Co-digester	\$804,234	\$0	\$350,000	77.0	Finalist
8	Kennedy/Jenks Consultants	Biogas Siloxane Treatment Using a Novel Nanomaterial Adsorbent	\$376,075	\$0	\$48,050	75.1	Finalist
9	Technikon, Inc.	Reducing Air Quality Impacts from Biogas-Fueled Generators-Demonstration of Air Purifying Technology	\$577,840	\$0	\$160,000	71.6	Finalist
Did not Pass							
10	Environ International Corporation	Air Quality Implications of Using Biogas to Replace Natural Gas, Facility Permitting Issues And Lifecycle NOx and CO2 Emission Impacts	\$100,000	\$0	\$0.00	Did Not Pass	Did Not Pass
11	Eastern Municipal Water District (EMWD)	Autocatalytic Combustion for Air Emission Control of Biogas Fired Engines	\$755,040	\$0	\$0.00	Did Not Pass	Did Not Pass
12	The Regents of the University of California	Conversion of Biogas to Ethanol Using Piston Engine As Reformer As Well As Power Source	\$192,000	\$0	\$0.00	Did Not Pass	Did Not Pass