



Notice of Request for Comments on Draft Solicitation to Increase Adoption of Emerging Clean Energy Technologies through Procurement

California Energy Commission staff is developing a competitive Grant Funding Opportunity (GFO) through the Electric Program Investment Charge (EPIC) to increase the adoption of emerging clean energy technologies in large-scale procurement processes. Staff is seeking input from stakeholders on the proposed solicitation approach, and more specifically seeks input to the questions asked about the solicitation at the end of this document (see page 6).

The Energy Commission's strategy to increase the adoption of emerging clean energy technologies in large-scale procurement processes is supported by the following objectives:

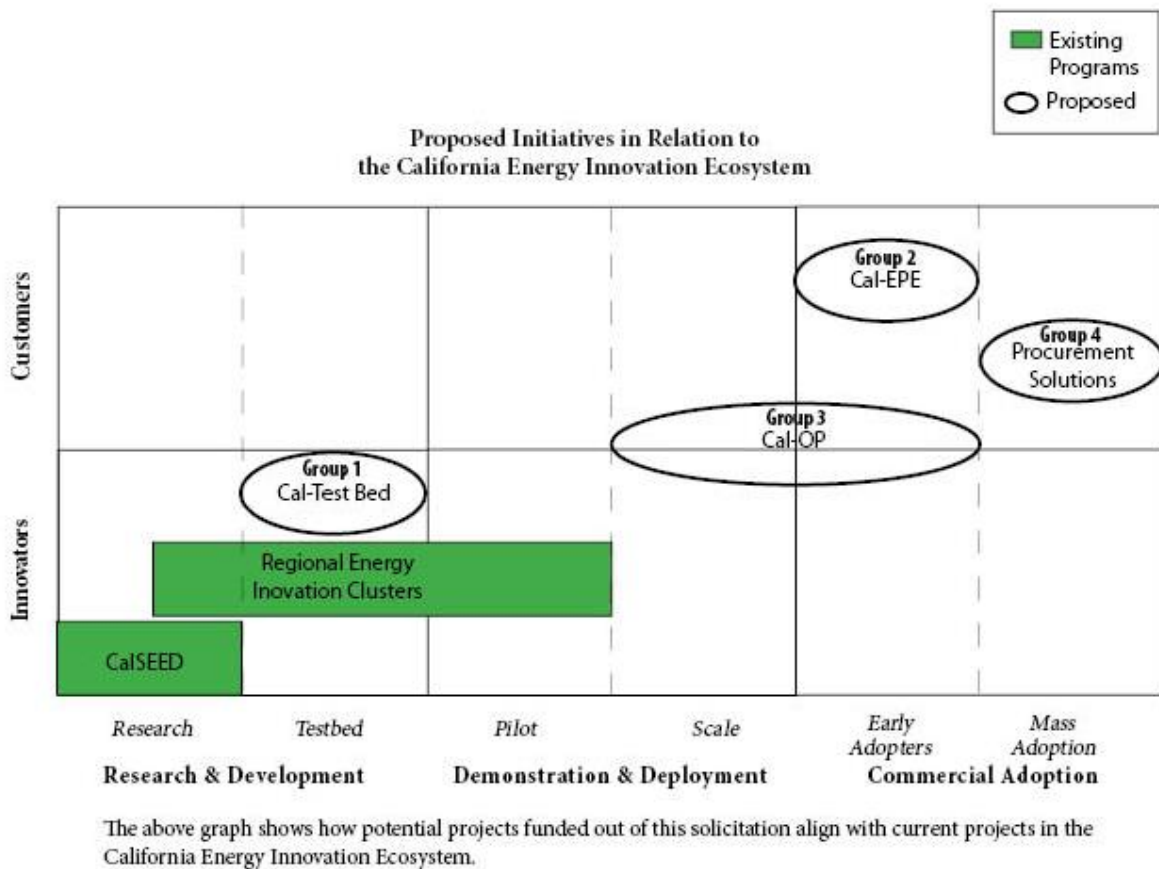
1. Enable new technologies to be designed and tested to the specifications of large-scale customers.
2. Support target customers in making informed clean energy procurement decisions.
3. Assist California clean energy ventures in successfully navigating and securing energy technology procurement opportunities.
4. Streamline the procurement practices and processes of large-scale customers.

Funding for this GFO is \$33 million, focused on the de-risking of clean energy procurement processes in an effort to increase the adoption of emerging clean energy technologies by target customers. Targeted customers under this GFO include, but are not limited to:

- School districts, including schools and administrative offices
- Ports
- Local governments
- State of California
- Military bases
- Construction industry
- Hospitals

- Colleges and Universities
- Agriculture
- Equipment vendors and installers for HVAC and lighting
- Food processing, distribution and food service industry including supermarkets
- Data centers

This GFO will fund the following four project groups to create pathways to deploy and increase adoption of emerging clean energy technologies.



Group 1 Test Bed Environment and Validation (Cal-Test Bed)

Clean energy entrepreneurs have difficulty making the leap from prototype to pilot scale demonstration of their technologies because they lack access to testing to validate their product design and performance, and lack technical feedback to shift product specifications to meet the needs and wants of potential customers. Group 1 will setup a voucher program to provide access for clean energy entrepreneurs to use testbed facilities to test and/or certify prototypes of pre-commercial customer-side technologies, and provide feedback to help entrepreneurs refine their product designs for future pilot demonstrations. The recipient will create and sustain a network of statewide testbed

facilities to be used by entrepreneurs who receive the vouchers. Included testbed facilities should be capable of testing numerous technologies and emulating building settings of the target customers of the solicitation. Testbed facilities in the Group 1 network must be able to test, but are not limited to the following technologies:

- Building integrated PV
- Solid-state building heating and cooling technologies
- Advanced electric heat pumps for space heating and water heating
- Cooling technologies using alternative refrigerants (high efficiency, low global warming and low ozone depleting) including CO₂, ammonia, propane, isobutene—test would include efficiency, and safety; absorption cooling
- High-efficiency windows
- Aftermarket treatments that improve energy efficiency of existing HVAC and building envelope systems.
- Solid-state lighting technologies and applications
- Building control technologies and systems
- Efficient micro/nano power devices and backup power supply, including thermoelectric devices

The recipient will be responsible for:

- Recruiting testing and certification facilities in California to participate on the project team.
- Negotiating contractual agreements with each facility to allow technology developers access to their facilities and services.
- Working with Energy Commission staff to setup a process for selecting technology developers to receive vouchers.

References:

<http://www.ct.gov/deep/cwp/view.asp?a=4405&Q=564350>

<http://newscenter.lbl.gov/2014/07/10/department-of-energys-flexlab-opens-testbeds-to-drive-dramatic-increase-in-building-efficiency/>

<https://www.serdp-estcp.org/Featured-Initiatives/Installation-Energy>

<http://cltc.ucdavis.edu/>

<https://www.diux.mil/docs/work-with-us/DIUX-Commercial-Solutions-Opening-White-Paper.pdf>

<https://arpa-e.energy.gov/?q=news-item/arpa-e-charges-program-validate-novel-grid-storage-technologies>

Group 2: California Energy Product Evaluation (Cal-EPE) Hub

Large customers responsible for procurement contracting are often times overwhelmed by the many uncertainties surrounding emerging, commercial clean energy technologies. New technologies entering the marketplace often lack rigorous, real-world evaluations that prioritize customer needs, leaving customers without pertinent details required to make better, more informed purchase decisions. As a result, large customers miss out on opportunities to procure technologies that could provide greater benefits over conventional technologies. Group 2 will provide funding to develop and operate a California Energy Product Evaluation (Cal-EPE) Hub that will evaluate emerging, commercial clean energy technologies, and compare them to existing government and industry standards, including but not limited to the Department of Energy's Energy Efficiency Standards specified in the Code of Federal Regulations and the Environmental Protection Agency's Energy Star specifications, test procedures and protocols by ASHRAE, IEEE and other nationally recognized standard setting groups, and those by the California Energy Commission associated with building and appliance efficiency standards. Cal-EPE will provide unbiased product reviews on energy savings, operation and maintenance and other costs, and ratings for the following product categories:

- LED lighting (including indoor and outdoor)
- Energy management systems
- Onsite energy storage systems
- Advanced electric heat pumps for space and water heating
- High efficiency agricultural irrigation systems
- Distributed PV systems
- Water heating
- Solid-state heating and cooling technologies

References:

<http://www.consumerreports.org/cro/index.htm>

Group 3: California Opportunities for Procurement (Cal-OP)

California clean energy ventures seeking to bring emerging clean energy technologies to market are often unsuccessful when bidding for contracts with large customers because they lack the resources to assess and comply with the regulatory and administrative hurdles. Customers, who often lack the institutional expertise and administrative tools to procure emerging clean energy technologies, frequently rely on labor-intensive procurement processes. As a result, California clean energy ventures

miss out on opportunities to scale their businesses, and large customers miss out on new, emerging clean energy technologies that could address their needs. Group 3 will provide and coordinate key services, assistance, and resources needed to bridge the gap between emerging energy technology solutions and large-scale procurement processes. Cal-OP will be dedicated to supporting clean energy ventures in successfully navigating and competing in energy procurement processes, while providing hands-on guidance and support to customers to update their procurement processes and practices to streamline the adoption of emerging clean energy technologies.

References:

<https://www.1776.vc/>

<http://bipartisanpolicy.org/wp-content/uploads/sites/default/files/Energy%20Innovation%20at%20DoD.pdf>

<http://www.aptac-us.org/>

Group 4: Procurement Solutions

Many customers who rely on procurement processes lack sufficient access to tools and operational methods to ensure efficient, comprehensive, and streamlined purchasing of emerging clean energy technologies and services, restricting purchasing options. Recipients of funding from Group 4 will design and deploy innovative tools and methods, or strategically advance the deployment of existing procurement tools and methods, such as software programs, online platforms, and business model innovations that can streamline the procurement process, aggregate purchases across multiple customers, help develop equipment specifications that can be used by agencies to procure bids for emerging clean energy technologies.

References:

<https://energy.gov/eere/success-stories/articles/eere-success-story-solar-people-online-marketplace-expands-solar>

<https://pickmysolar.com/about-pick-my-solar/>

https://www.epa.gov/sites/production/files/2016-03/documents/cecp_agencies.pdf

<http://www.coupa.com/software/procurement/>

Proposed funding amounts for the four groups are as follows:

For Group 1, one awardee will be selected. Proposed \$12 million.

For Group 2, one awardee will be selected. Proposed \$13 million.

For Group 3, one awardee will be selected. Proposed \$4 million.

For Group 4, up to 6 awardees will be selected, for a minimum award of \$500,000 and a maximum award of \$1,000,000 each. Proposed \$4 million.

Questions:

Energy Commission staff is seeking input from interested stakeholders on the attached sections of the draft GFO. Specifically, staff seeks responses and comments on the following questions:

1. (For all groups) What are barriers that large-scale customers face when procuring emerging energy technology solutions? Would projects funded from this solicitation help address those barriers? If not, what specific changes would you recommend to help ensure the resulting projects meet large-scale customer procurement needs?
2. (For all groups) What are specific recommendations you can provide for improving the purpose of the solicitation outlined in this RFC? Please explain the rationale behind the recommendations.
3. (For all groups) Are there existing efforts that complement the groups identified in this RFC? What specific changes to this proposed solicitation would you suggest to best leverage these existing efforts?
4. (For all groups) Are the proposed funding amounts identified in this RFC appropriate for the work requested? Please explain the rationale behind the recommendations, and, if applicable, what would the expected cost be to adequately test and evaluate the technology types identified in this draft solicitation?
5. (For Group 1) Should the Energy Commission require test bed locations in both Northern and Southern California? Please explain the rationale behind the recommendations.
6. (Groups 1 and 2) Are there additional technologies we should consider or technologies we should remove from the lists provided in this RFC? Please explain the rationale behind the recommendations.
7. (Group 3) How can Group 3 most effectively build trust with target customers to ensure that the target customers are buying high quality products?
8. (For Group 4) What are the largest impediments to successful deployment of solutions that can facilitate successful procurement of emerging energy technologies? Are there solutions not addressed under this proposed solicitation that would address these impediments? Please explain the rationale behind the recommendations.

EPIC Program Background

EPIC is a ratepayer surcharge authorized by the California Public Utilities Commission (CPUC). In December 2011, the CPUC adopted Decisions 11-12-035, as modified by Decision 13-01-016, authorizing the collection of EPIC funds for the benefit of electricity ratepayers of Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE). In May 2012, the CPUC adopted Decision 12-05-037, as modified by Decision 13-04-030, establishing the purposes and governance for the EPIC Program and designating the Energy Commission as one of its administrators. On April 9, 2015, the CPUC adopted Decision 15-04-020, which approved the Energy Commission's Proposed 2015-2017 EPIC Investment Plan. The plan sets the framework for providing investments in applied research and development, technology demonstration and deployment, and market facilitation of clean energy technologies and approaches. Additionally, Senate Bill 96 (Committee on Budget and Fiscal Review, Chapter 356, Statutes of 2013) provides that in administering the EPIC Program, the Energy Commission will fund research, development, and demonstration programs and projects that lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory energy goals, and result in advancements on the most significant technological challenges.

The California Energy Commission is committed to supporting the inclusion of a diverse group of participants from disadvantaged and underrepresented businesses and communities – including disabled veteran-, women-, LGBTQ- and minority-owned businesses.

To learn how to apply for EPIC solicitations please see:

http://www.energy.ca.gov/research/notices/2014-06-17_workshop/2014-06-17_EPIC_solicitations_presentation.pdf.

For additional information on the EPIC Program, please see:

www.energy.ca.gov/research/epic/index.html.

Written Comments

Comments should be submitted by **5 p.m. on Monday, March 13, 2017**. The Energy Commission encourages comments through the Energy Commission's docket system to Docket # 16-EPIC-01(EPIC Idea Exchange). Please include your name and the name of the organization you represent. Comments should be in a downloadable, searchable format such as Microsoft® Word (.doc) or Adobe® Acrobat® (.pdf). Please include the title of the EPIC Request for Comments: Increase Adoption of Emerging Clean Energy Technologies through Procurement in the subject line.

If you prefer, you may send a paper copy of your comments to:

Nicholas Blair

California Energy Commission

Energy Research and Development Division

1516 Ninth Street, MS-51

Sacramento, CA 95814-5512

Public Adviser and Other Commission Contacts

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission proceedings. If you want information on how to participate in this forum, please contact the Public Adviser, Alana Mathews, at PublicAdviser@energy.ca.gov or (916) 654-4489, toll free at (800) 822-6228.

If you have a disability and require assistance to participate, please contact Poneh Jones at Poneh.Jones@energy.ca.gov or (916) 654-4425 at least five days in advance.

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