

CALIFORNIA ENERGY COMMISSION

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



Kickoff Questionnaire for Benefits Analysis of EPIC Projects

Agreement Number: _____

Award Recipient: _____

Project Title: _____

Commission Agreement Manager: _____

Award Recipient Contact Name: _____

Award Recipient Contact Email: _____

Date of Response: _____

Agreement Start Date: _____

Agreement End Date: _____

Instructions

The purpose of EPIC is to award funding to RD&D projects that will lead to economic, environmental, and other benefits for the ratepayers of California's investor-owned electric utilities. To assess and report on the fulfillment of that purpose, the Energy Commission requires that all EPIC award recipients respond to a questionnaire relating to the costs, benefits, and various other attributes of their projects. Information provided herein will be used to prepare reports and evaluations of the EPIC program for the California Public Utilities Commission (CPUC), the Legislature, and other audiences.

This is the first of three questionnaires that you will be asked to complete over the course of the agreement. Please type your responses directly into this PDF document in the spaces below each question. Use as much space as you need; the form automatically creates more space within each response field. In addition, you may submit additional documents, spreadsheets, or other files. Acceptable file types are MS Word, MS Excel, and PDF. Additional files do not need to follow any particular format, unless specified by the particular questionnaire designed for your project.

This Kickoff Questionnaire contains the following sections:

- **Section A:** Diversity Survey
- **Section B:** Photograph Release Form
- **Section C:** Categorical Reporting to the CPUC
- **Section D:** Telling the Story of your Project
- **Section E:** Expected Technical and Economic Benefits

If you have any comments, questions, or concerns regarding the questionnaire, please contact your Commission Agreement Manager.

Section A. Diversity Survey

Please use the following definitions to answer the survey on page 5.

California-based entity:

A California-based entity (CBE) is a corporation or other business entity organized for the transaction of business that must be registered with the Secretary of State and either:

- Has its headquarters in California AND manufactures the product or provides the service that is the subject of the award in California; or
- Has an office for the transaction of business in California and substantially manufactures the product or substantially performs the research within California that is the subject of the award.

The Department of General Services certifies small businesses and Disabled Veteran Business Enterprises. Certification requirements are as follows:

Small business:

A small business must meet the following requirements:

- Be independently owned and operated;
- Not dominant in field of operation;
- Have its principal office located in California;
- Owners (officers, if a corporation) domiciled in California; and,
- Including affiliates, be either,
 - A business with 100 or fewer employees; an average annual gross receipts of \$14 million or less, over the last three tax years;
 - A microbusiness (A small business will automatically be designated as a microbusiness, if gross annual receipts are less than \$3,500,000; or the small business is a manufacturer with 25 or fewer employees); or,
 - A manufacturer with 100 or fewer employees. A manufacturer is a business that is both of the following:
 - Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - Classified between Codes 31 to 339999, inclusive, of the North American Industrial Classification System (NAICS) Manual, published by the United States Census Bureau, 2007 edition.

Disabled-veteran-owned business:

A disabled veteran owned business must be at least 51% owned by one or more disabled veterans and whose daily business operations must be managed and controlled by one or more disabled veterans.

A 'disabled veteran' is a veteran of the U.S. military, naval, or air service with a service-connected disability of at least 10% or more, and who resides in California. For more information see: <http://www.dgs.ca.gov/>

The CPUC certifies businesses as women-owned, minority-owned and/or LGBT-owned, as defined by General Order 156:**Woman-owned business:**

"Woman-owned" (section 1.3.2) is a business at least 51% owned by one or more women, and whose management and daily business operations are controlled by one or more women.

Minority-owned business:

"Minority-owned" (section 1.3.3) is a business at least 51% owned by one or more minority individuals, and whose management and daily operations are controlled by one or more minority individuals. Recognized minorities include Asian Americans, African Americans, Hispanic Americans and Native Americans, among others.

Lesbian-Gay-Bisexual-Transgender-owned business:

"LGBT-owned" (section 1.3.4) is a business at least 51% owned by a lesbian, gay, bisexual, or transgender person or persons and whose management and daily operations are controlled by one or more of those individuals.

For more information see: <http://consumers.cpuc.ca.gov/Certifications/>

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**Diversity Survey**

Solicitation #: _____ Agreement #: _____

Date of Approval at Energy Commission Business Meeting: _____

The California Energy Commission is committed to ensuring participation in its R&D programs reflects the rich and diverse characteristics of California and its people. This includes conducting outreach efforts and activities to improve access to funding opportunities and encourage greater participation by underrepresented groups including California business entities, small businesses, disabled veteran-, women-, LGBT-, and minority-owned businesses. To assist us in this effort, please fill out the following brief survey. The data you provide will be used in EPIC annual reports. The information provided will not be considered for future awards. Responses to this survey are voluntary but provide valuable feedback and are highly encouraged.

Please return your completed survey to your Commission Agreement Manager at your soonest convenience. For additional information on the Energy Commission's commitment to diversity, please contact our Public Adviser's office at PublicAdviser@energy.ca.gov or (916) 654-4489 or (800) 822- 6228. Thank you in advance for your cooperation. Select all that apply.

	Organization Name (Fill in)	California- based entity	Small business	Woman- owned business	Minority- owned business	Disabled- veteran- owned business	LGBT- owned business
Prime							
Sub #1							
Sub #2							
Sub #3							
Sub #4							
Sub #5							
Sub #6							
Sub #7							
Sub #8							
Sub #9							

Section B. Photograph Release Form

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Photograph Release Form

The California Energy Commission has launched a new web page called the Energy Innovation Showcase which will highlight innovative projects funded by the Commission. The web page will enable users to easily find and share information on these projects.

As part of this web page, we would appreciate if you could send us images you feel best illustrate the project or the problem the project is helping to address. These images can be photos, schematics, infographics, etc. Please email the Commission Agreement Manager 4-6 high resolution images of your project.

For the web page, digital photographs need to be high quality (minimum resolution of 1300x500 pixels) in landscape ratio. For each photo, please include a brief description and a photo credit/photographer's name.

Please do **NOT** send us personal information, such as your home address, telephone number, or other personal information that you do not want shared by the Commission. Also, please do not include photos featuring individuals who might object to having their images used by the Commission as described herein.

By signing this form, you give the California Energy Commission and its employees, agents, representatives and assigns (collectively the Commission) in perpetuity permission and a no-cost, non-exclusive, worldwide, royalty-free license to display the submitted photographs on the Commission's website (energy.ca.gov), affiliate websites, and in Commission presentations and publications, and without compensation or claim to how the Commission uses the photographs. At any time you may request in writing that the Commission stop using the photographs. By signing this form, you also warrant that you have authority to provide the rights described herein to the Commission and agree to indemnify, release, and hold harmless the Commission and the State of California from any and all claims and liability arising out of the Commission's use of the photographs as described herein.

Signature

Date

Please print name

C. Categorical Reporting to the CPUC

In Decision 13-11-025, dated November 14, 2013, of proceedings A.12-11-001 *et al.*, the California Public Utilities Commission ordered that administrators of EPIC funds must identify the areas of measurement and metrics by which each project is to be evaluated for benefits to ratepayers. The list below is taken directly from the CPUC's decision and cannot be modified. Apply a checkmark to each item that represents an area of measurement or specific metric applicable to your project. You do not need to report any numeric value in this form.

1. Potential energy and cost savings

- a. ☐ Number and total nameplate capacity of distributed generation facilities
- b. ☐ Total electricity deliveries from grid-connected distributed generation facilities
- c. ☐ Avoided procurement and generation costs
- d. ☐ Number and percentage of customers on time variant or dynamic pricing tariffs
- e. ☐ Peak load reduction (MW) from summer and winter programs
- f. ☐ Avoided customer energy use (kWh saved)
- g. ☐ Percentage of demand response enabled by automated demand response technology (e.g. Auto DR)
- h. ☐ Customer bill savings (dollars saved)
- i. ☐ Nameplate capacity (MW) of grid-connected energy storage.

2. Job creation

- a. ☐ Hours worked in California and money spent in California for each project

3. Economic benefits

- a. ☐ Maintain / Reduce operations and maintenance costs
- b. ☐ Maintain / Reduce capital costs
- c. ☐ Reduction in electrical losses in the transmission and distribution system
- d. ☐ Number of operations of various existing equipment types (such as voltage regulation) before and after adoption of a new smart grid component, as an indicator of possible equipment life extensions from reduced wear and tear
- e. ☐ Non-energy economic benefits
- f. ☐ Improvements in system operation efficiencies stemming from increased utility dispatchability of customer demand side management
- g. ☐ Co-benefits and co-products (e.g. feed, soil amendment, lithium extraction)
- h. ☐ Energy Security (reduced energy and energy-related material imports)

4. Environmental benefits.

- a. ☐ GHG emissions reductions (MMTCO₂e)
- b. ☐ Criteria air pollution emission reductions
- c. ☐ Water savings
- d. ☐ Water quality improvement
- e. ☐ Waste reductions
- f. ☐ Habitat area disturbance reductions
- g. ☐ Wildlife fatality reductions (electrocutions, collisions)

5. Safety, Power Quality, and Reliability (Equipment, Electricity System)

- a. ☐ Outage number, frequency and duration reductions
 - b. ☐ Electric system power flow congestion reduction
 - c. ☐ Forecast accuracy improvement
 - d. ☐ Public safety improvement and hazard exposure reduction
 - e. ☐ Utility worker safety improvement and hazard exposure reduction
 - f. ☐ Reduced flicker and other power quality differences
 - g. ☐ Reduction in system harmonics
 - h. ☐ Increase in the number of nodes in the power system at monitoring points
6. ☐ Other Metrics (to be developed based on specific projects through ongoing administrator coordination and development of competitive solicitations)

Public Utilities Code

In addition to the above, the CPUC requires the Energy Commission to report on the fulfillment of statutory mandates by EPIC award recipients. Please select all statements that apply to your project:

Public Utilities Code § 8360

It is the policy of the state to modernize the state's electrical transmission and distribution system to maintain safe, reliable, efficient, and secure electrical service, with infrastructure that can meet future growth in demand and achieve all of the following, which together characterize a smart grid:

- 1. ☐ Increased use of cost-effective digital information and control technology to improve reliability, security, and efficiency of the electric grid.
- 2. ☐ Dynamic optimization of grid operations and resources, including appropriate consideration for asset management and utilization of related grid operations and resources, with cost-effective full cyber security.
- 3. ☐ Deployment and integration of cost-effective distributed resources and generation, including renewable resources.
- 4. ☐ Development and incorporation of cost-effective demand response, demand-side resources, and energy-efficient resources.
- 5. ☐ Deployment of cost-effective smart technologies, including real time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation.
- 6. ☐ Integration of cost-effective smart appliances and consumer devices.
- 7. ☐ Deployment and integration of cost-effective advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air-conditioning.
- 8. ☐ Provide consumers with timely information and control options.
- 9. ☐ Develop standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.
- 10. ☐ Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.

Public Utilities Code § 740.1(e)

Each project should also support one or more of the following objectives:

1. ☐ Environmental improvement.
2. ☐ Public and employee safety.
3. ☐ Conservation by efficient resource use or by reducing or shifting system load.
4. ☐ Development of new resources and processes, particularly renewable resources and processes which further supply technologies.
5. ☐ Improve operating efficiency and reliability or otherwise reduce operating costs.

CPUC Proceedings related to your Project

The CPUC requires the Energy Commission to identify the CPUC proceedings relevant to each EPIC project. This can include projects that will directly inform or provide input to CPUC proceedings, as well as projects which support the implementation of CPUC decisions. Please select all proceedings relevant to your project:

- ☐ **Alternative Fueled Vehicles (R.13-11-007):** Rulemaking to consider programs, tariffs, and policies to support alternative-fueled vehicles.
- ☐ **Demand Response (R.13-09-011):** Rulemaking to enhance the role of demand response for resource planning.
- ☐ **Long-Term Procurement Proceeding (current cycle) (R.13-12-010):** The LTPP evaluates the needs for grid capacity at system, local, and flexible needs on a 10-year-ahead basis. When needs are identified, the CPUC authorizes procurement. The assumptions are revised every two years.
- ☐ **Long-Term Procurement Proceeding (2016 cycle) (proceeding # TBD):**
- ☐ **Resource Adequacy (R.11-10-023):** Guides resource procurement and promotes infrastructure investment by requiring that LSEs procure capacity so that capacity is available to the CAISO when and where needed.
- ☐ **Water-Energy Nexus (R.13-12-011):** This proceeding is examining how energy efficiency portfolios can be coordinated to promote water conservation and how cost effectiveness should be calculated for water-energy nexus programs.
- ☐ **Residential Zero Net Energy Action Plan (proceeding # TBD):** The Energy Efficiency Strategic Plan is an evolving roadmap for how California IOUs will increase energy efficiency through the year 2020 and beyond.
- ☐ **Energy Efficiency Strategic Plan Update and Action Plans (D.10-09-047):** Rulemaking R.13-11-005 encompasses current energy efficiency portfolios through 2015, implements energy efficiency 'rolling portfolios', and various related policy issues.
- ☐ **Energy Efficiency Proceedings (R.13-11-005):** This proceeding encompasses current energy efficiency portfolios through 2015, implements energy efficiency 'rolling portfolios', and various related policy issues.
- ☐ **Self-Generation Incentive Program (R.12-11-005):** Rebates for qualifying distributed energy systems installed on the customer's side of the utility meter. Qualifying technologies include wind turbines, waste heat to power technologies, pressure

reduction turbines, internal combustion engines, microturbines, gas turbines, fuel cells, and advanced energy storage systems.

- ☐ **Renewables Portfolio Standard (R.11-05-005):** This proceeding continues implementation and administration of the California RPS.
- ☐ **Energy Storage (R.15-03-011):** This proceeding continues to refine policies and program details for the Energy Storage Procurement Framework and Program and considers recommendations from the California Energy Storage Roadmap, jointly developed by the CAISO, CEC, and CPUC.
- ☐ **Smart Grid (R.08-12-009):** Considers setting policies, standards and protocols to guide the development of a smart grid system and facilitate integration of new technologies such as distributed generation, storage, demand-side technologies, and electric vehicles.
- ☐ **Customer Data Access Program (D.11-07-056, D.13-09-025):** The Customer Data Access (CDA) program allows customers to authorize third parties to automatically access their Smart Meter hourly usage data, directly from the utility data servers. In September 2013, the Commission adopted a process for oversight of third parties who are accessing customer data by participating in the CDA program.
- ☐ **Distribution Resources Plans (R.14-08-013):** Implements AB 327 requirements for CPUC review, modification, and approval of IOU distribution resources plans (DRPs). DRPs must “identify optimal locations for the deployment of distributed resources.”
- ☐ **Rule 21 (R.11-09-011):** This proceeding considers changes to Rule 21 regarding interconnection, operating and metering requirements for generation facilities to be connected to a utility’s distribution system.
- ☐ **Smart Inverters (D.14-12-035, R.11-09-011):** Adopts modifications to Electric Tariff Rule 21 to capture the technological advances offered by smart inverters.
- ☐ **SB 1122 Bioenergy feed-in tariff (R.11-05-005):** This proceeding is considering rules to implement SB 1122 (Rubio, 2012) requiring an incremental 250 MW of renewable Feed-in Tariff (FIT) procurement from small-scale bioenergy projects that commence operation on or after June 1, 2013.
- ☐ **QF & CHP Settlement (D.10-12-035., R.08-06-024):** The Qualifying Facilities and Combined Heat & Power Program Settlement addresses numerous QF-related issues and establishes a new QF/CHP Program. The program has two goals: (1) IOUs will procure a minimum of 3,000 MW of CHP over the program period, & (2) the IOUs will reduce GHG emissions consistent with the ARB Climate Change Scoping Plan.
- ☐ **Net Energy Metering (R.14-07-002):** This proceeding is seeking to develop a successor to existing NEM tariffs, pursuant to Public Utilities (PU) Code Section 2827.1. AB 327 directed the CPUC to ensure that the NEM successor policy includes “specific alternatives designed for growth among residential customers in disadvantaged communities.”

- ☐ **California Solar Initiative (R.12-11-005):** This proceeding covers policies, procedures and rules for the California Solar Initiative. The CSI Program is a subset of the wider solar effort in California. The statewide goal of the Go Solar California campaign is 3,000 MW of distributed solar.

If you are aware of any CPUC proceedings relevant to your project but not listed above, list them here:

Next, please briefly explain the relevance of your project to the CPUC proceedings indicated in your responses above.

Finally, please note that the CPUC requires the Energy Commission to collect and report upon the following information for each project (where applicable). No response is necessary at the present time, but questions relating to these items will be asked in the final questionnaire.

1. Effectiveness of information dissemination

- a. Web-based surveys of people viewing materials or participating in program reviews
- b. Number of reports and fact sheets published online
- c. Number of times reports are cited in scientific journals and trade publications for selected projects
- d. Number of information sharing forums held
- e. Stakeholders attendance at workshops
- f. Technology transfer

2. Adoption of EPIC technology, strategy, and research data/results by others

- a. Description/documentation of projects that progress deployment, such as Commission approval of utility proposals for wide spread deployment or technologies included in adopted building standards
- b. Number of technologies eligible to participate in utility energy efficiency, demand response or distributed energy resource rebate programs
- c. EPIC project results referenced in regulatory proceedings and policy reports
- d. Successful project outcomes ready for use in California IOU grid (Path to market)
- e. Technologies available for sale in the market place (when known)

D. Telling the Story of Your Project

Research, development, and demonstration (RD&D) can be a long, complex process. EPIC may not be the first source of funding for your concept nor will it be your last. The purpose of these questions is to ascertain and document the role of EPIC in enabling your innovation

1. Technology Readiness Level

What was the technology readiness level (TRL) of the technology or set of technologies that are the focus of this project at the time you applied for EPIC funding? Refer to the U.S. Department of Energy definitions of TRL, available here ([Page 10, Table 1](#)). Next, if all the goals and objectives of the project are achieved, what is the anticipated TRL of each technology identified in question 1?

If the table below does not provide adequate space, use the comment field. If your project does not involve the research, development, and/or demonstration of one or more specific technologies, make a note in the comment field and *skip to question 2*.

	Technology Name or Description	Current TRL	Target TRL
A		#	#
B		#	#
C		#	#
D		#	#
E		#	#

Provide comments below if clarification or qualification is needed.

2. Role of EPIC

Describe the contribution of EPIC to enabling this project. In answering this question, discuss following factors:

- How much RD&D investment occurred prior to the EPIC award?
- If EPIC funds had not been available, are there any other public sector or investor-owned electric utility funding sources that may have been available instead?
- If you had not received any source of public sector or investor-owned electric utility funding at this stage, how likely would you have been to receive adequate private funding? How much longer would it have taken to secure private funding?

Feel free to add any additional comments about the value of EPIC to the overall RD&D pipeline for your technology or idea.

3. Related Energy Commission R&D Projects

In some instances, projects funded by the Energy Commission help each other attain collective goals. In these cases, we try to evaluate the benefits of a group of projects collectively. Please list any prior Energy Commission-funded RD&D projects that led to or informed this current project, as well as any concurrent or potential future projects that are relevant to this project.

4. After EPIC

If the project is successful, how will the lessons learned from this project be carried forward? What is the next stage? What is the ultimate goal for the application of the knowledge gained? For example, if this is a study, how will it inform policymaking? If this is a technology development or demonstration project, what is the path to market?

5. Knowledge Transfer and Dissemination

With whom will the results of this project be shared? (e.g. industry trade groups, academia, policymaking community, the general public)? How will the result be disseminated (e.g. conference, articles published in an academic or trade journal, filing a patent)?

6a. Jobs Paid for by EPIC Funds

How many California residents will be paid with EPIC funds during the term of this project? Where are they located? (You do not need to report out-of-state employment.) For each entry, provide a single address if all work is being conducted at that address. If work is being conducted by the same people at multiple field sites within a single city, county or region, simply name the city, county, or region, as applicable. Include work performed by contractors and subcontractors.

Refer to the agreement budget to provide numeric values. “Number of People Working at this location” should include the total number of both full-time and part-time staff. Separately, report the number of hours budgeted.

Place of Work (provide address if unique)	Number of People Working at this Location	Hours Worked over Term of Project

6b. Jobs Paid for by Match Funds

How many California residents will be paid with match funds during the term of this project? Where are they located? (You do not need to report out-of-state employment.) For each entry, provide a single address if all work is being conducted at that address. If work is being conducted by the same people at multiple field sites within a single city, county or region, simply name the city, county, or region, as applicable. Include work performed by contractors and subcontractors.

Refer to the agreement budget to provide numeric values. “Number of People Working at this location” should include the total number of both full-time and part-time staff. Separately, report the number of hours budgeted.

Place of Work (provide address if unique)	Number of People Working at this Location	Hours Worked over Term of Project

6c. Additional Comments regarding Jobs

If necessary, use this space to add any comments to clarify your responses to 6a & 6b.

7. Education, Skills Training, and Workforce Development

Will this project contribute to the education or training of any people employed on the project? (e.g. topic of a dissertation for a graduate student; skill building for apprentice tradespersons)

E. Expected Technical and Economic Benefits

In an attached document, discuss how your project will lower costs, improve reliability, and/or increase safety. If applicable, you may also include emission reductions, expected future jobs, water savings, waste reductions, or any other benefits.

For the purposes of this initial questionnaire, you are welcome to rely on the quantitative estimates of costs, benefits, and market potential you provided in your proposal. However, we are also specifically seeking a discussion of assumptions, sources relied upon, and calculations performed. Preferred sources include: measured project data, citation of prior research, professional best estimate, or value targeted by a project objective. If new data are available relative to the time when you submitted your proposal, then take this opportunity to update your initial calculation.

Only quantify benefits and costs for which you can make at least a professional judgment, or an educated guess, not a pure guess. A response based on professional judgment provides a sense of expected magnitude, based on your experience or understanding of your technology and its market. It is also acceptable to provide a range of possible values rather than a single point estimate. Even limited responses are more valuable to us than no information. If you feel you cannot meet these criteria at the current stage of the project, then please describe when and how your project may be ready to provide a quantification of benefits.

While this initial questionnaire is free-form in nature, please note that you can expect a questionnaire with more guidance and specificity at the later stages of your project. The response you provide now will help ensure that future questionnaires better suit the circumstances of your project.

Acceptable file formats include Microsoft Word, Microsoft Excel, or PDF. Include the EPIC agreement number or a short name for your project in the filename. List the filename of each attachment in the text box below. This will help us keep track of your entire response.