

Attachment A
Introduction, Eligibility, and Attachment 13 Sections
Only

GRANT FUNDING OPPORTUNITY

**Developing A Portfolio of Advanced Efficiency
Solutions: Plug Load Technologies and
Approaches for Buildings**

Phase II



GFO-[XX]-[XXX]

<http://www.energy.ca.gov/contracts/index.html>

State of California
California Energy Commission

Fall 2015

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I. Introduction

A. PURPOSE OF SOLICITATION

The purpose of this solicitation is to fund applied research and development projects that develop next generation plug load efficiency technologies and strategies for the building sector. This solicitation applies to new construction and existing residential and commercial buildings in California. Funded projects must emphasize emerging plug load technologies and improvements to processes and operations in new construction or existing buildings.

Energy efficiency is a major strategy for reducing the state's energy costs and greenhouse gas (GHG) impacts. Innovations in technology, construction practices, and building operations are needed to meet the state's aggressive goals for energy efficiency and zero net energy (ZNE) buildings, in addition to GHG emission reduction targets.

Projects must fall within one of the following project groups:

Group A: Develop Next Generation Plug-Load Devices & Technologies

This group seeks research projects focused on improving the energy efficiency of a variety of plug load devices and miscellaneous electrical devices by developing, implementing, measuring, and verifying their energy savings potential. Projects may target devices and components that are highly inefficient, operate uncontrolled with long operating hours, and have the potential for large energy savings (in part through power scaling) in residential and commercial buildings.

Group B: Develop Integrated Plug Load Strategies

Projects under this category may focus on improving energy efficiency by integrating plug load devices and other miscellaneous electrical devices together. Projects may target devices and components that are integrated with building energy management systems that enhance building controls while minimizing energy use.

Please see Attachment 13 for a description of suggested projects within these funding groups.

See Part II of this solicitation for project eligibility requirements. Applications will be evaluated as follows: Stage One proposal screening and Stage Two proposal scoring. If an applicant submits multiple applications that address the same project group, each application must be for a distinct project (i.e., no overlap with respect to the tasks described in the Scope of Work, Attachment 6).

B. KEY WORDS/TERMS

Word/Term	Definition
Applicant	The respondent to this solicitation

Word/Term	Definition
Application	An applicant's formal written response to this solicitation
CAM	<i>Commission Agreement Manager</i> , the person designated by the Energy Commission to oversee the performance of an agreement resulting from this solicitation and to serve as the main point of contact for the Recipient
EPIC	<i>Electric Program Investment Charge</i> , the source of funding for the projects awarded under this solicitation
Energy Commission	California Energy Commission
IOU	<i>Investor-owned utility</i> , including Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison Co.
NOPA	<i>Notice of Proposed Award</i> , a public notice that identifies the proposed award recipients
Principal Investigator	The lead scientist or engineer for the applicant's project, who is responsible for overseeing the project; in some instances, the Principal Investigator and Project Manager may be the same person
Project Manager	The person designated by the applicant to oversee the project and to serve as the main point of contact for the Energy Commission
Project Partner	An entity or individual that contributes financially or otherwise to the project (e.g., match funding, provision of a demonstration site), and does not receive Energy Commission funds
Recipient	The recipient of an award under this solicitation
Solicitation	This entire document, including all attachments and exhibits ("solicitation" may be used interchangeably with "grant funding opportunity")
State	State of California

C. APPLICANTS' ADMONISHMENT

This solicitation contains application requirements and instructions. Applicants are responsible for **carefully reading** the solicitation, asking appropriate questions in a timely manner, ensuring that all solicitation requirements are met, submitting all required responses in a complete manner by the required date and time, and **carefully rereading** the solicitation before submitting an application. In particular, please carefully read the **Screening/Scoring Criteria and Grounds for Rejection** in Part IV, and the terms and conditions located at: <http://www.energy.ca.gov/research/contractors.html>.

Applicants are responsible for the cost of developing applications. This cost cannot be charged to the State. All submitted documents will become public records upon the posting of the Notice of Proposed Award.

D. BACKGROUND

1. Electric Program Investment Charge (EPIC) Program

This solicitation will award projects funded by the EPIC, an electricity ratepayer surcharge established by the California Public Utilities Commission (CPUC) in December 2011.¹ The purpose of the EPIC program is to benefit the ratepayers of three investor-owned utilities (IOUs), including Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison Co. The EPIC funds clean energy technology projects that promote greater electricity reliability, lower costs, and increased safety.² In addition to providing IOU ratepayer benefits, funded projects must lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.³ The EPIC program is administered by the California Energy Commission and the IOUs.

2. Program Areas, Strategic Objectives, and Funding Initiatives

EPIC projects must fall within the following **program areas** identified by the CPUC:

- Applied research and development;
- Technology demonstration and deployment; and
- Market facilitation

In addition, projects must fall within one of 18 general focus areas (“**strategic objectives**”) identified in the Energy Commission’s EPIC Investment Plan⁴ and within one or more specific focus areas (“**funding initiatives**”) identified in the plan.

This solicitation targets the following program areas, strategic objectives, and funding initiatives:

- **Program Area:** Applied Research and Development
- **Strategic Objective S1:** Develop Next-Generation End-Use Efficiency Technologies and Strategies for the Building Sector
- **Funding Initiative S1.6**
 - **S1.6:** Reduce energy use of plug-load devices through the development of products, systems, and controls, and evaluation of consumer behavior that affects energy use

Suggested projects are described in Attachment 13.

¹ See CPUC “Phase 1” Decision 11-12-035, December 15, 2011, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/156050.PDF.

² See CPUC “Phase 2” Decision 12-05-037, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.

³ California Public Resources Code, Section 25711.5(a), <http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=25001-26000&file=25710-25712>.

⁴ http://www.energy.ca.gov/research/epic/documents/final_documents_submitted_to_CPUC/2012-11-01_EPIC_Application_to_CPUC.pdf.

3. Applicable Laws, Policies, and Background Documents

This solicitation addresses the energy goals described in the following laws, policies, and background documents.

Laws/Regulations

- **Assembly Bill (AB) 32 (“The Global Warming Solutions Act of 2006”)**

AB 32 created a comprehensive program to reduce greenhouse gas (GHG) emissions in California. GHG reduction strategies include a reduction mandate of 1990 levels by 2020 and a cap-and-trade program. AB 32 also required the California Air Resources Board (ARB) to develop a Scoping Plan that describes the approach California will take to reduce GHGs. ARB must update the plan every five years.

Additional information: <http://www.arb.ca.gov/cc/ab32/ab32.htm>

Applicable Law: California Health and Safety Code §§ 38500 et. seq.

- **AB 758, Building Efficiency (Statutes of 2009)**

AB 758 requires the Energy Commission to collaborate with the California Public Utilities Commission and stakeholders to develop a comprehensive program to achieve greater energy savings in existing residential and nonresidential buildings. The Energy Commission developed a *Comprehensive Energy Efficiency Program for Existing Buildings Scoping Report* in 2012, and plans to develop voluntary and mandatory strategies and approaches to achieve energy savings.

Additional information: <http://www.energy.ca.gov/ab758/>

Applicable Law: California Public Resources Code § 25943, California Public Utilities Code §§ 381.2 and 385.2

- **AB 1109 (“The California Lighting Efficiency and Toxics Reduction Act”, Statutes of 2007)**

AB 1109 places restrictions on the manufacture and sale of certain general purpose lights (i.e., lamps, bulbs, tubes, and other electric devices that provide functional illumination for indoor and outdoor use) that contain hazardous substances. It also requires the Energy Commission to adopt minimum energy efficiency standards for general purpose lights and to make recommendations to the Governor and Legislature regarding the continuation of reduced lighting consumption beyond 2018.

Additional Information: <http://www.energy.ca.gov/2008publications/CEC-400-2008-015/CEC-400-2008-015.PDF>

Applicable Law: California Health and Safety Code §§ 25210.9 et. seq., California Public Resources Code § 25402.5.4

- **Appliance Efficiency Regulations**

The Energy Commission promulgates appliance efficiency regulations that require manufacturers of various new appliances sold or offered for sale in California to test them using specified test methods. Covered appliances include refrigerators, air conditioners, heaters, plumbing fitting/fixtures, lighting, washers, dryers, cooking products, electric motors, transformers, power supplies, televisions, and battery charger systems.

Additional information: <http://www.bsc.ca.gov/>; <http://www.energy.ca.gov/appliances/>

Applicable Law: California Code of Regulations, Title 20, Division 2, Chapter 4, Article 4, §§ 1601 et. seq.

- **California Energy Code**

The Energy Code is a component of the California Building Standards Code, and is published every three years through the collaborative efforts of state agencies including the California Building Standards Commission and the Energy Commission. The Code ensures that new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality through use of the most energy efficient technologies and construction.

Additional information: <http://www.energy.ca.gov/title24/>

Applicable Law: California Code of Regulations, Title 24, Part 6 and associated administrative regulations in Part 1

Policies/Plans

- **Governor's Clean Energy Jobs Plan (2011)**

In June 2011, Governor Jerry Brown announced a plan to invest in clean energy and increase efficiency. The plan includes a goal of producing 20,000 megawatts (MW) of renewable electricity by 2020 by taking the following actions: addressing peak energy needs, developing energy storage, creating efficiency standards for buildings and appliances, and developing combined heat and power (CHP) projects. Specific goals include building 8,000 MW of large-scale renewable and transmission lines, 12,000 MW of localized energy, and 6,500 MW of CHP.

Additional information: http://gov.ca.gov/docs/Clean_Energy_Plan.pdf

- **Integrated Energy Policy Report (Biennial)**

California Public Resources Code Section 25302 requires the Energy Commission to release a biennial report that provides an overview of major energy trends and issues facing the state. The IEPR assesses and forecasts all aspects of energy industry supply, production, transportation, delivery, distribution, demand, and pricing. The Energy Commission uses these assessments and forecasts to develop energy policies.

Additional information: <http://www.energy.ca.gov/energypolicy>

Applicable Law: California Public Resources §§ 25300 et. seq.

- **CPUC's Energy Efficiency Strategic Plan (2008)**

The Energy Efficiency Strategic Plan creates a roadmap for achieving energy efficiency within the residential, commercial, industrial, and agricultural sectors. The plan was updated in January 2011 to include a lighting chapter.

Additional information: <http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/eesp/>

Reference Documents

Refer to the link below for information about past Energy Commission research projects and activities:

- <http://www.energy.ca.gov/research/>

Refer to the documents below for information about activities associated with building energy efficiency

- Electric Program Investment Charge 2014 Annual Report (Publication # CEC- 500-2015-013-CMF) (April 30, 2015)
<http://www.energy.ca.gov/2015publications/CEC-500-2015-013/CEC-500-2015-013-CMF.pdf>
- The 2014 PIER Annual Report (Publication # CEC-500-2015-009-CMF) (March 30, 2015)
<http://www.energy.ca.gov/2015publications/CEC-500-2015-009/CEC-500-2015-009-CMF.pdf>
- Workshop on Potential Research Topic Areas for Upcoming Building Energy Efficiency Solicitation (February 23, 2012)
<http://www.energy.ca.gov/research/notices/index.html#02232012>
- Office Plug Load Field Monitoring Report (Publication # CEC-500-2011-010) (September 26, 2011)
<http://www.energy.ca.gov/2011publications/CEC-500-2011-010/CEC-500-2011-010.pdf>

E. FUNDING

1. Amount Available and Minimum/ Maximum Funding Amounts

There is up to **\$9,900,000** available for grants awarded under this solicitation. **The total, minimum, and maximum funding amounts for each project group are listed below. Funds may be moved between the groups if there is an insufficient number of passing proposals within a group.**

Project Group	Available funding	Minimum award amount	Maximum award amount
Group A	\$7,000,000	\$500,000	\$2,000,000
Group B	\$2,900,000	\$500,000	\$2,000,000

2. Match Funding Requirement

Match funding is not required for this solicitation. However, applications that include match funding will receive additional points during the scoring phase.

- **“Match funds”** include: (1) “cash in hand” funds; (2) equipment; (3) materials; (4) information technology services; (5) travel; (6) subcontractor costs; (7) contractor/project partner in-kind labor costs; and (8) “advanced practice” costs. Match funding sources include the prime contractor, subcontractors, and pilot testing/demonstration/deployment sites (e.g., test site staff services).

“Match funds” do not include: Energy Commission awards, EPIC funds received from other sources, future/contingent awards from other entities (public or private), the cost or value of the project work site, or the cost or value of structures or other improvements affixed to the project work site permanently or for an indefinite period of time (e.g., photovoltaic systems).

Definitions of “match funding” categories are listed below.

- **“Cash in hand” Funds** means funds that are in the recipient’s possession and are reserved for the proposed project, meaning that they have not been committed for use or pledged as match for any other project. “Cash in hand” funds include funding awards earned or received from other agencies for the proposed technologies or study (but not for the identical work). As applicable, proof that the funds exist as cash is required at the project kick-off meeting. Cash in hand funds will be considered more favorably than other types of match funding during the scoring phase.
- **“Equipment”** means an item with a unit cost of at least \$5,000 and a useful life of at least one year. **Purchasing equipment with match funding is encouraged** because there are no disposition requirements at the end of the agreement for such equipment. Typically, grant recipients may continue to use equipment purchased with Energy Commission funds if the use is consistent with the intent of the original agreement.
- **“Materials”** means tangible project items that cost less than \$5,000 and have a useful life of less than one year.
- **“Information Technology Services”** means the design, development, application, implementation, support, and management of computer-based information systems directly related to the tasks in the Scope of Work. All information technology services in this area must comply with the electronic file format requirements in Subtask 1.1 (Products) of the Scope of Work (Attachment 6).
- **“Travel”** means all travel required to complete the tasks identified in the Scope of Work. Travel includes in-state and out-of-state travel, and travel to conferences. Use of match funds for out-of-state travel and travel to conferences is encouraged.
- **“Subcontractor Costs”** means all costs incurred by subcontractors for the project, including labor and non-labor costs.
- **“Contractor/Project Partner In-Kind Labor Costs”** means contractor or project partner labor costs that are not charged to the Energy Commission.
- **“Advanced Practice Costs”** means costs not charged to the Energy Commission that represent the incremental cost difference between standard and advanced practices, measures, and products used to implement the proposed project. For example, if the cost of purchasing and/or installing insulation that meets the applicable building energy efficiency standard is \$1/square foot and the cost of more advanced, energy efficient insulation is \$3/square foot, the Recipient may count up to \$2/square foot as match funds.
- Match funds must be spent only during the agreement term, either before or concurrently with EPIC funds. Match funds also must be reported in invoices submitted to the Energy Commission.
- All applicants providing match funds must submit commitment letters that: (1) identify the source(s) of the funds; (2) justify the dollar value claimed; (3) provide an unqualified (i.e., without reservation or limitation) commitment that guarantees the availability of the funds for the project; and (4) provide a strategy for replacing the funds if they are significantly reduced or lost. Please see Attachment 11, Commitment and Support Letter Form.

3. Change in Funding Amount

The Energy Commission reserves the right to:

- Increase or decrease the available funding and the group minimum/maximum award amounts described in this section.
- Allocate any additional or unawarded funds to passing applications, in rank order.
- Reduce funding to an amount deemed appropriate if the budgeted funds do not provide full funding for agreements. In this event, the Recipient and Commission Agreement Manager will reach agreement on a reduced Scope of Work commensurate with available funding.

F. KEY ACTIVITIES SCHEDULE

Key activities, dates, and times for this solicitation and for agreements resulting from this solicitation are presented below. An addendum will be released if the dates change for activities that appear in **bold**.

ACTIVITY	DATE	TIME ⁵
Solicitation Release	September X, 2015	
Pre-Application Workshop	September X, 2015	X:00
Deadline for Written Questions⁶	September X, 2015	5:00 p.m.
Anticipated Distribution of Questions and Answers	October X, 2015	
Deadline to Submit Applications	October X, 2015	3:00 p.m.
Anticipated Notice of Proposed Award Posting Date	December X, 2015	
Anticipated Energy Commission Business Meeting Date	March X, 2015	
Anticipated Agreement Start Date	April X, 2015	
Anticipated Agreement End Date	[Insert date]	

G. PRE-APPLICATION WORKSHOP

Energy Commission staff will hold two Pre-Application Workshops to discuss the solicitation with applicants. Participation is optional but encouraged. Applicants may attend the workshops in-person, via the internet (WebEx, see instructions below), or via conference call on the date and at the time and location listed below. Please call (916) XXX-XXXX or refer to the Energy Commission's website at www.energy.ca.gov/contracts/index.html to confirm the date and time.

Workshop # 1 Northern CA

Date and time: September X, 2015

Location: California Energy Commission
1516 9th Street
Sacramento, CA 95814
[Insert room location]

Workshop # 2 Southern CA

Date and time: September X, 2015

Location: [Insert Location]
[Insert address]
[Insert City], CA [Insert ZIP]
[Insert room location]

⁵ Pacific Standard Time or Pacific Daylight Time, whichever is being observed.

⁶ This deadline does not apply to non-technical questions (e.g., questions concerning application format requirements or attachment instructions) or to questions that address an ambiguity, conflict, discrepancy, omission, or other error in the solicitation. Such questions may be submitted to the Commission Agreement Officer listed in Section H at any time prior to the application deadline. Please see Section H for additional information.

WebEx Instructions:

- To join the WebEx meeting, go to <https://energy.webex.com> and enter the meeting number and password below:

Work Shop # 1 Northern CA

Meeting Number: [Insert]

Meeting Password: [Insert]

Topic: Developing a Portfolio of Advanced Efficiency Solutions: Technologies and Approaches for More Affordable and Comfortable Buildings Phase II

Work Shop # 2 Southern CA

Meeting Number: [Insert]

Meeting Password: [Insert]

Topic: Developing a Portfolio of Advanced Efficiency Solutions: Technologies and Approaches for More Affordable and Comfortable Buildings Phase II

- To Logon with a Direct Phone Number: After logging into WebEx, a prompt will appear on-screen for a phone number. In the "Number" box, enter your area code and phone number and click "OK" to receive a call for the audio of the meeting. International callers may use the "Country/Region" button to help make their connection.
- To Logon with an Extension Phone Number: After you login, a prompt will ask for your phone number. Select "CANCEL." Call **1-866-469-3239** (toll-free in the U.S. and Canada). When prompted, enter the meeting number above and the unique Attendee ID number listed in the top left area of the screen after login. International callers may dial in using the "Show all global call-in numbers" link (also in the top left area).

Telephone Access Only:

Call **1-866-469-3239** (toll-free in the U.S. and Canada). When prompted, enter the meeting number above. International callers may select their number from <https://energy.webex.com/energy/globalcallin.php>.

Technical Support:

- For assistance with problems or questions about joining or attending the meeting, please call WebEx Technical Support at **1-866-229-3239**. You may also contact [Insert name of technical program staff contact] at (916) [***-****].
- System Requirements: To determine whether your computer is compatible, visit: <http://support.webex.com/support/system-requirements.html>.
- Meeting Preparation: The playback of UCF (Universal Communications Format) rich media files requires appropriate players. Please determine whether the players are installed on your computer by visiting: <https://energy.webex.com/energy/systemdiagnosis.php>.

H. QUESTIONS

During the solicitation process, direct questions to the Commission Agreement Officer listed below:

[Insert name], Commission Agreement Officer
California Energy Commission
1516 Ninth Street, MS-18
Sacramento, California 95814
Telephone: (916) 654-[XXXX]
FAX: (916) 654-4423
E-mail: [insert e-mail]@energy.ca.gov

Applicants may ask questions at the Pre-Application Workshop, and may submit written questions via mail, electronic mail, and by FAX. However, all **technical** questions must be received by the deadline listed in the “Key Activities Schedule” above. **Non-technical** questions (e.g., questions concerning application format requirements or attachment instructions) may be submitted to the Commission Agreement Officer at any time prior the application deadline.

A question and answer document will be e-mailed to all parties who attended the Pre-Application Workshop and provided their contact information on the sign-in sheet. The questions and answers will also be posted on the Commission’s website at: <http://www.energy.ca.gov/contracts/index.html>.

If an applicant discovers an **ambiguity, conflict, discrepancy, omission, or other error** in the solicitation after the deadline for written questions but prior to the application deadline, the applicant may notify the Energy Commission in writing and request modification or clarification of the solicitation. The Energy Commission will provide modifications or clarifications by written notice to all parties who requested the solicitation. At its discretion, the Energy Commission may re-open the question/answer period to provide all applicants the opportunity to seek any further clarification required. *If an applicant submits a question after the deadline for written questions that does not concern a non-technical issue or a solicitation ambiguity, conflict, discrepancy, omission, or other error, the Commission Agreement Officer will refer the applicant to the solicitation documents for guidance.*

Any verbal communication with a Commission employee concerning this solicitation is not binding on the State and will in no way alter a specification, term, or condition of the solicitation. Therefore, all communication should be directed in writing to the assigned Commission Agreement Officer.

II. Eligibility Requirements

A. APPLICANT REQUIREMENTS

1. Eligibility

This solicitation is open to all public and private entities and individuals with the exception of publicly-owned utilities. In accordance with CPUC Decision 12-05-037, funds administered by the Energy Commission may not be used for any purposes associated with publicly-owned utility activities.

2. Terms and Conditions

Each grant agreement resulting from this solicitation will include terms and conditions that set forth the recipient's rights and responsibilities. By signing the Application Form (Attachment 1), each applicant agrees to enter into an agreement with the Energy Commission to conduct the proposed project according to the terms and conditions that correspond to its organization, without negotiation: (1) University of California terms and conditions; (2) U.S. Department of Energy terms and conditions; or (3) standard terms and conditions. All these terms and conditions are located at <http://www.energy.ca.gov/research/contractors.html>.

Failure to agree to the terms and conditions by taking actions such as failing to sign the Application Form or indicating that acceptance is based on modification of the terms will result in **rejection** of the application. Applicants **must read** the terms and conditions carefully. The Energy Commission reserves the right to modify the terms and conditions prior to executing grant agreements.

3. California Secretary of State Registration

California business entities and non-California business entities that conduct intrastate business in California and are required to register with the California Secretary of State must do so and be in good standing in order to enter into an agreement with the Energy Commission. If not currently registered with the California Secretary of State, applicants should contact the Secretary of State's Office as soon as possible. For more information, visit the Secretary of State's website at: www.sos.ca.gov.

B. PROJECT REQUIREMENTS

1. **Applied Research and Development Stage**

Projects must fall within the "applied research and development" stage, which includes activities that support pre-commercial technologies and approaches that are designed to solve specific problems in the electricity sector. By contrast, the "technology demonstration and deployment" stage involves the installation and operation of pre-commercial technologies or strategies at a scale sufficiently large and in conditions sufficiently reflective of anticipated actual operating environments to enable appraisal of the operational and performance characteristics and the financial risks.⁷ Applied research and development activities include early, pilot-scale testing activities that are necessary to demonstrate the feasibility of pre-commercial technologies.

2. **Project Focus**

⁷ See CPUC "Phase 2" Decision 12-05-037 at pp. 36 and 90, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.

The Energy Commission is seeking applied research and development projects that focus on lowering building electricity use related to plug loads in new and existing residential and commercial buildings. Projects must fall within one of the following groups:

- **Group A: Develop Next Generation Plug-Load Devices & Technologies**
- **Group B: Develop Integrated Plug Load Strategies**

Please refer to Attachment 13 included at the end for additional information on funding groups, funding initiatives, and suggested projects

3. Ratepayer Benefits, Technological Advancements, and Breakthroughs

California Public Resources Code Section 25711.5(a) requires EPIC-funded projects to:

- Benefit electricity ratepayers; and
- Lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state’s statutory energy goals.

The CPUC defines “ratepayer benefits” as greater reliability, lower costs, and increased safety.⁸ The CPUC has also adopted the following guiding principles as complements to the key principle of electricity ratepayer benefits: societal benefits; GHG emissions mitigation and adaptation in the electricity sector at the lowest possible cost; the loading order; low-emission vehicles/transportation; economic development; and efficient use of ratepayer monies.⁹

Accordingly, the Project Narrative Form (Attachment 4) and the “Goals and Objectives” section of the Scope of Work Template (Attachment 6) must describe how the project will: (1) benefit California IOU ratepayers by increasing reliability, lowering costs, and/or increasing safety; and (2) lead to technological advancement and breakthroughs to overcome barriers to achieving the state’s statutory energy goals.

4. Measurement and Verification Plan

Include a Measurement and Verification Plan in the Project Narrative (Attachment 4) that describes how actual project benefits will be measured and quantified, such as by pre- and post-project energy use (kilowatt hours, kilowatts) and cost. Any estimates of energy savings or GHG impacts must be calculated using the References for Calculating Electricity End-Use, Electricity Demand, and GHG Emissions (Attachment 12).

⁸ *Id.* at p. 19.

⁹ *Id.* at pp. 19-20.

ATTACHMENT 13

Funding Groups, Funding Initiatives, and Sample Projects

This attachment describes each funding group included in this solicitation and includes examples of potential projects that are aligned with the EPIC Investment Plan and are in areas that are critical to meeting the state's energy policy goals. The projects included are not an exhaustive enumeration of potential projects. All projects must demonstrate benefits to IOU electricity ratepayers as required in Part II of the solicitation (Eligibility Requirements). Up to \$9,900,000 is available for projects in the following areas:

1. Group A: Develop Next Generation Plug Load Devices (EPIC Funding Initiative S1.6)

Available Funding: Up to \$7,000,000

2. Group B: Develop Integrated Plug Load Strategies (EPIC Funding Initiative S1.6)

Available Funding: Up to \$2,900,000

- **S1.6:** Reduce the energy use of plug-load devices through the development of products, systems, and controls, and evaluation of consumer behavior that affects energy use

I. GROUP A: DEVELOP NEXT GENERATION PLUG LOAD DEVICES

Applications

Residential and commercial

Suggested Projects

1. Technologies

Projects may focus on improving the energy efficiency of a variety of plug load devices and miscellaneous electrical devices by developing, implementing, measuring, and verifying their energy savings potential. Projects may target devices and components that are highly inefficient, operate uncontrolled with long operating hours, and have the potential for large energy savings (in part through power scaling) in residential and commercial buildings.

Potential project activities include:

- Equipment on 24/7: reduce idle loads of devices that are on 24/7 such as microwaves, burglar and security systems, sprinkler controllers, thermostats, and displays.
- Set top boxes and DVR boxes: develop and test set top boxes and DVR boxes that can resume operation after sleep mode within one second. The minimum energy goal is a sleep mode that consumes less than one watt.
- Plug load analytics: develop software which can effectively reduce excess plug load energy consumption by analyzing smart meter data.
- Pool Pumps: improve controls so that pool pumps are not consistently left in the "ON" position longer than needed.
- Recirculating hot water pumps: improve controls on recirculating hot water pumps so that they are not left in the "ON" position without any controls.

ATTACHMENT 13

Funding Groups, Funding Initiatives, and Sample Projects

- Personal computers and computer displays and monitors: develop and test methods that enable hibernation and sleep modes on computers when idle without inconveniencing users. The minimum energy goal is a 20 percent reduction in energy use from today's most efficient computers.
- Office equipment and home entertainment (including televisions and audio equipment): develop and test methods that enable sleep modes when equipment is idle without inconveniencing users. The minimum energy goal is a 20 percent reduction in energy use.
- Gaming systems/consoles and video conferencing equipment: develop and test methods that increase energy efficiency and enable sleep modes when equipment is idle. The minimum energy goal is a 20 percent reduction in energy use.
- Develop component-level efficiency improvement and reporting, and components that can be power-scaled.

2. Codes and Standards

Projects may involve the development, testing, and validation of algorithms that accurately model unique or innovative advanced energy efficiency systems in order to support future energy codes and standards.

II. GROUP B: DEVELOP INTEGRATED PLUG LOAD STRATEGIES

Applications

Residential and commercial

Suggested Projects

1. Strategies

Projects may focus on improving energy efficiency by integrating plug load devices and other miscellaneous electrical devices together. Projects may target devices and components that are integrated with building energy management systems that enhance building controls while minimizing energy use.

Potential project activities include:

- The integration of distributed or plug load control to reduce phantom loads and manage plug loads based on occupancy.
- Mobile or wireless controls, user friendly interfaces, and off-site and on-site monitoring for plug load devices to control energy use and analyze energy savings potential.

2. Control Integration and Displays

Projects may involve the development of systems and devices that inform consumers to make energy efficient choices. Potential project activities include:

ATTACHMENT 13

Funding Groups, Funding Initiatives, and Sample Projects

- Develop power supply and internal energy reporting.
- Develop test procedures for enabling communication between devices.
- Develop home networking systems and energy management system monitoring to provide real-time energy use information for homeowners.
- Integrate plug load systems and devices with demand response applications and other energy consuming systems in buildings.
- Evaluate market and industry acceptance and behavior of plug load integration.
- Develop integrated technology to achieve proportionality between the energy consumed and the useful work delivered to devices.

3. Codes and Standards

Projects may involve the development, testing, and validation of algorithms that accurately model unique or innovative advanced energy efficiency integration systems in order to support their ability to comply with future energy codes and standards.