



**CALIFORNIA  
ENERGY COMMISSION**



**California Energy Commission  
February 12, 2025 Business Meeting  
Backup Materials for The Regents of the University of California, on behalf of the  
Berkeley campus (UCB)**

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Grant Request Form
3. Scope of Work

**[PROPOSED]**

**RESOLUTION NO: 25-212-09c**

**STATE OF CALIFORNIA**

**STATE ENERGY RESOURCES  
CONSERVATION AND DEVELOPMENT COMMISSION**

**RESOLUTION: The Regents of the University of California, on behalf of the  
Berkeley campus (UCB)**

**RESOLVED**, that the State Energy Resources Conservation and Development Commission (CEC) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

**RESOLVED**, that the CEC approves agreement EPC-24-035 with The Regents of the University of California, on behalf of the Berkeley campus (UCB), for a \$1,999,999 grant. This agreement will fund the development and demonstration of scalable demand flexibility solutions in large commercial distributed energy resources using interoperable control protocols and price- and grid-signal responsive building automation systems for coordinated load shedding and shifting among buildings and EV chargers to support the electricity grid. Development of the demand flexibility control software will occur at UCB, whereas installation and demonstration of the software will occur at the Regent of University of California, on behalf of the Irvine campus and the American Honda Motor Company campus; and

**FURTHER BE IT RESOLVED**, that the Executive Director or their designee shall execute the same on behalf of the CEC.

**CERTIFICATION**

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the CEC held on February 12, 2025.

AYE:

NAY:

ABSENT:

ABSTAIN:

Dated:

---

Kristine Banaag  
Secretariat



## GRANT REQUEST FORM (GRF)

### A. New Agreement Number

**IMPORTANT:** New Agreement # to be completed by Contracts, Grants, and Loans Office.

**New Agreement Number:** EPC-24-035

### B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Matthew Fung
3. MS-:43
4. Phone Number: 916-776-0757

### C. Recipient's Information

1. Recipient's Legal Name: The Regents of the University of California, on behalf of the Berkeley Campus
2. Federal ID Number: 94-6002123

### D. Title of Project

Title of project: Super-GX: Scale Grid-responsive Supervisory Control for Multiple Commercial Buildings and EV Charging

### E. Term and Amount

1. Start Date: 3/3/2025
2. End Date: 3/30/2029
3. Amount: \$1,999,999.00

### F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 2/12/2025 .
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Dustin Davis
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

#### **Agenda Item Subject and Description:**

The Regents of the University of California, on behalf of the Berkeley campus. Proposed resolution approving agreement EPC-24-035 with The Regents of the University of California, on behalf of the Berkeley campus (UCB), for a \$1,999,999 grant, and adopting staff's recommendation that this action is exempt from CEQA. This agreement will fund the development and demonstration of scalable demand flexibility solutions in large commercial distributed energy resources using interoperable control protocols and price- and grid-signal responsive building automation systems for coordinated load shedding and shifting among buildings and EV chargers to support the electricity grid. Development of the demand flexibility control software will occur at UCB, whereas installation and demonstration of the software will occur at the Regent of University of California, on behalf of the Irvine campus and the American Honda Motor Company campus.

### G. California Environmental Quality Act (CEQA) Compliance



**1. Is Agreement considered a “Project” under CEQA?**

Yes

If yes, skip to question 2.

If no, complete the following (PRC 21065 and 14 CCR 15378) and explain why Agreement is not considered a “Project”:

Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because:

**2. If Agreement is considered a “Project” under CEQA answer the following questions.**

a) Agreement **IS** exempt?

Yes

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

Yes

If yes, list CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

CCR section number: Cal. Code Regs., tit. 14, § 15301 ;

Common Sense Exemption? 14 CCR 15061 (b) (3)

No

If yes, explain reason why Agreement is exempt under the above section. If no, enter “Not applicable” and go to the next section.

Cal. Code Regs., tit 14, sec. 15301 provides that projects which consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of existing or former use at the time of the lead agency’s determination, are categorically exempt from the provisions of California Environmental Quality Act (CEQA). The Regents of the University of California, on behalf of the Berkeley campus is developing demand flexibility control software at the Regent of University of California, on behalf of the Berkeley campus and installing the demand flexibility software at existing facilities at the Regent of University of California, on behalf of the Irvine campus and the American Honda Motor Company campus by adding the software to the building energy systems. Up to 10 existing buildings will benefit from this demand flexibility software through enhanced building and electric vehicle charging load control to reduce energy demand and energy costs. This project will result in negligible or no expansion of use



beyond that already existing. Therefore, the project falls within section 15301 and will not have a significant effect on the environment.

The project does not involve impacts on any particularly sensitive environment; will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of successive projects of the same type in the same place that might be considered significant; does not involve unusual circumstances that might have a significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and this project will not have a significant effect on the environment.

b) Agreement **IS NOT** exempt.

**IMPORTANT:** consult with the legal office to determine next steps.

No

If yes, answer yes or no to all that applies. If no, list all as “no” and “None” as “yes”.

Additional Documents	Applies
Initial Study	No
Negative Declaration	No
Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

#### H. Is this project considered “Infrastructure”?

No

#### I. Subcontractors

List all Subcontractors listed in the Budget (s) (major and minor). Insert additional rows if needed. If no subcontractors to report, enter “No subcontractors to report” and “0” to funds.

**Delete** any unused rows from the table.

Subcontractor Legal Company Name	CEC Funds	Match Funds
Altura Associates, LLC.	\$ 489,349	\$0
TRC Engineers, Inc.	\$ 400,153	\$0
National Alliance for High-Performance Building Operations	\$ 25,000	\$0
TBD - Community College	\$ 30,000	\$0



## J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter "No vendors or sellers to report" and "0" to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
The Regents of the University of California, on behalf of the Irvine campus	\$0	\$1,500,000
American Honda Motor Co., Inc.	\$0	\$100,000
TBD - Gift Card	\$3,000	\$0
Delaware Tridium, Inc.	\$37,887	\$0
SkyFoundry, LLC.	\$23,600	\$0

## K. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter "No key partners to report." **Delete** any unused rows from the table.

Key Partner Legal Company Name
Altura Associates, LLC.
TRC Engineers, Inc.
The Regents of the University of California, on behalf of the Irvine campus
American Honda Motor Co., Inc.

## L. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter "N/A" for "Not Applicable" and "0" to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	23-24	301.001K	\$ 1,999,999

**TOTAL Amount:** \$ 1,999,999

R&D Program Area: ICMB: IAW

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: Not applicable

## M. Recipient's Contact Information

### 1. Recipient's Administrator/Officer

Name: Jessie Brown



STATE OF CALIFORNIA  
CALIFORNIA ENERGY COMMISSION

Grant Request Form  
CEC-270 (Revised 01/2024)

Address: 1608 4Th St Ste 220  
City, State, Zip: Berkeley, CA 94710-1749  
Phone: 510-642-8120  
E-Mail: jwbrown@berkeley.edu

**3. Recipient's Project Manager**

Name: Therese Peffer  
Address: 2087 Addison St Fl 2  
City, State, Zip: Berkeley, CA 94704-1268  
Phone: 510-289-4278  
E-Mail: tpeffer@berkeley.edu

**N. Selection Process Used**

There are three types of selection process. List the one used for this GRF.

Selection Process	Additional Information
Competitive Solicitation #	GFO-23-309
First Come First Served Solicitation #	Not applicable
Other	Not applicable

**O. Attached Items**

1. List all items that should be attached to this GRF by entering "Yes" or "No".

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	No
5	Awardee CEQA Documentation	No

**Approved By**

Individuals who approve this form must enter their full name and approval date in the MS Word version.

**Agreement Manager:** Matthew Fung

**Approval Date:** 12/06/2024

**Branch Manager:** Cody Taylor



STATE OF CALIFORNIA  
CALIFORNIA ENERGY COMMISSION

Grant Request Form  
CEC-270 (Revised 01/2024)

**Approval Date:** 12/18/2024

**Director:** Cody Taylor for Jonah Steinbuck

**Approval Date:** 12/18/2024



**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**I. TASK ACRONYM/TERM LISTS**

**A. Task List**

<b>Task #</b>	<b>CPR<sup>1</sup></b>	<b>Task Name</b>
1		General Project Tasks
2	X	Grid Flexible Solution Development
3	X	Demonstrations
4	X	Market Development
5		Community Benefit
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

**B. Acronym/Term List**

<b>Acronym/Term</b>	<b>Meaning</b>
AB	Assembly Bill
API	Application Programming Interface
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BACnet	Communication protocol for building automation and control system
BAS	Building Automation System
CAM	Commission Agreement Manager
CEC	California Energy Commission
CPR	Critical Project Review
DR	Demand Response
EPIC	Electric Program Investment Charge
EV	Electric Vehicle
HVAC	Heating, Ventilation, and Air Conditioning
IOU	Investor-owned Utility
M&V	Measure and Verification
MIDAS	Market Informed Demand Automation Server
Recipient	The Regents of the University of California, on behalf of the Berkeley campus
Super-GX	Supervisory Controller Grid Flexible demand flexibility software solution
TAC	Technical Advisory Committee
VAV	Variable Air Volume

**II. PURPOSE OF AGREEMENT, PROBLEM/SOLUTION STATEMENT, AND GOALS AND OBJECTIVES**

---

<sup>1</sup> Please see subtask 1.3 in Part III of the Scope of Work (General Project Tasks) for a description of Critical Project Review (CPR) Meetings.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**A. Purpose of Agreement**

The purpose of this Agreement is to fund a project that will deploy and scale electric grid-responsive supervisory control for multiple commercial buildings and electric vehicle (EV) charging and pave a path to adoption by providing education to building owners and decision-makers, and training to building managers and engineers.

**B. Problem/ Solution Statement**

**Problem**

While the demand response (DR) potential for large commercial building electrical energy is well-documented, adoption is slow due to several technical, social, and economic issues. These include “siloe” energy systems (for example, Heating Ventilation and Air Conditioning (HVAC) equipment and lighting systems); lack of education and training for building owners and decision makers, building managers, and building engineers; lack of trust in open-source solutions; and the cost of labor to interface with specific points in legacy Building Automation Systems (BAS). Because these issues cut across multiple disciplines, no single entity has addressed these barriers. However, the rapidly changing electricity grid—spurred by climate-change driven electrification, renewable energy resources, and energy storage—encourages a new approach to scaling the adoption of large commercial energy flexibility.

**Solution**

The Regents of the University of California, on behalf of the Berkeley campus (Recipient) will demonstrate and scale demand flexibility in large commercial building Distributed Energy Resources by developing the open-source Supervisory Controller Grid Flexible (Super-GX) demand flexibility software solution. Accelerating adoption using open-source mechanisms requires 1) proving the technology through multiple case studies, providing lots of data and a variety of examples, and 2) providing training, education, and resources at multiple levels (building owner, facility manager, building engineer), and sharing with other system integrators. The Super-GX technology leverages an industry standard BAS and data analytics platform to provide visibility to building operators. The project will show the simplicity of adding a system integrator’s supervisory control to integrate price signals and novel DR algorithms to enable demand flexibility in large commercial buildings.

Super-GX will 1) demonstrate and evaluate a market-ready DR supervisory control, 2) exhibit coordination of load shedding and shifting among buildings and EV chargers to support the electric grid, 3) validate using open standards, standard semantic tagging and protocols to improve interoperability; contribute novel demand flexible strategies to open libraries, and develop tools/guidelines to encourage adoption; and 4) work with communities to promote value to end-users, provide education and training to building owners, facility managers, building operators, and software system integrators.

**C. Goals and Objectives of the Agreement**

**Agreement Goals**

The goals of this Agreement are to:

# **Exhibit A**

## **Scope of Work**

### **The Regents of the University of California, on behalf of the Berkeley campus**

- demonstrate a market-ready DR approach that can be easily deployed at scale;
- develop and demonstrate DR capability and coordination across multiple buildings and campuses, including novel approaches to control behind the meter EV chargers in conjunction with traditional building loads to harden demand flexibility,
- use open standards, contribute to open libraries, and develop tools/guidelines to encourage adoption through well-established go-to market strategies, and
- work with established communities on promoting value to end users, building engineers, and owners.

**Ratepayer Benefits:**<sup>2</sup> This Agreement will result in the ratepayer benefits of greater electricity reliability and lower costs by increasing demand flexibility (including reducing peak demand). Grid-responsive electricity consumption helps to prevent power outages and can reduce demand charges faced by commercial buildings.

**Technological Advancement and Breakthroughs:**<sup>3</sup> This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals in several ways: 1. Fulfilling the CEC's Electric Program Investment Charge (EPIC) 2021-2025 Investment Plan Program Area: Increase the Value Proposition of Distributed Energy Resources to Customers and the Grid, whose Strategic Objective includes Increasing Reliability and Interoperability of Load-Flexible Technologies. The project will work with the community to understand barriers to adoption and to train workers 2. Assembly Bill (AB) 32 and Senate Bill 32 - Global Warming Solutions Act of 2006: by reducing peak loads, fewer polluting "peaker" plants will have to operate, thus reducing greenhouse gases. 3. AB 758 , Building Efficiency: Many DR measures can also improve energy efficiency; for example, a DR measure to increase temperature during warm months might be demonstrated to shift or shed load during critical periods. This also demonstrates to the facilities manager the impact on the building occupants, and can result in the measure adopted permanently as an energy efficient measure.

#### **Agreement Objectives**

The objectives of this Agreement are to:

- Improve adoption rates by developing an open-source demand flexible measure package with grid-flexible strategies, algorithms and underlying tools that addresses interoperability challenges and promotes standardization while maintaining comfort and convenience for end users;
- Demonstrate and evaluate the cost-effectiveness of the demand flexible package in several buildings, interfacing with utility programs and the Market Informed Demand Automation Server (MIDAS) signal;

---

<sup>2</sup> California Public Resources Code, Section 25711.5(a) requires projects funded by the Electric Program Investment Charge (EPIC) to result in ratepayer benefits. The California Public Utilities Commission, which established the EPIC in 2011, defines ratepayer benefits as greater reliability, lower costs, and increased safety (See CPUC "Phase 2" Decision 12-05-037 at page 19, May 24, 2012, [http://docs.cpuc.ca.gov/PublishedDocs/WORD\\_PDF/FINAL\\_DECISION/167664.PDF](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF)).

<sup>3</sup> California Public Resources Code, Section 25711.5(a) also requires EPIC-funded projects to lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory and energy goals.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- Facilitate market deployment by partnering with established manufacturer and associate building software data vendors to develop a process that uses a semantic model and supervisory software layer to automate screening, develop new algorithms/analytics/asset-point modeling, and contribute through established libraries and ontologies
- Provide community benefit and market adoption by developing and deploying building engineer and contractor training.

### **III. TASK 1 GENERAL PROJECT TASKS**

#### **PRODUCTS**

##### **Subtask 1.1 Products**

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V)**. All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations. All technical tasks should include product(s). Products that require a draft version are indicated by marking “**(draft and final)**” after the product name in the “Products” section of the task/subtask. If “(draft and final)” does not appear after the product name, only a final version of the product is required. With respect to due dates within this Scope of Work, “**days**” means working days.

##### **The Recipient shall:**

###### For products that require a draft version, including the Final Report Outline and Final Report

- Submit all draft products to the CAM for review and comment in accordance with the Project Schedule (Part V). The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- Consider incorporating all CAM comments into the final product. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product.
- Submit the revised product and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period, or approves a request for additional time.

###### For products that require a final version only

- Submit the product to the CAM for acceptance. The CAM may request minor revisions or explanations prior to acceptance.

###### For all products

- Submit all data and documents required as products in accordance with the following:

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

Instructions for Submitting Electronic Files and Developing Software:

○ **Electronic File Format**

- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the California Energy Commission's (CEC) software and Microsoft (MS)-operating computing platforms, or with any other format approved by the CAM. Deliver an electronic copy of the full text of any Agreement data and documents in a format specified by the CAM, such as memory stick.

The following describes the accepted formats for electronic data and documents provided to the CEC as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

○ **Software Application Development**

Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:

- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
- Visual Studio.NET (version 2008 and up). Recommend 2010.
- C# Programming Language with Presentation (UI), Business Object and Data Layers.
- SQL (Structured Query Language).
- Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
- Microsoft SQL Reporting Services. Recommend 2008 R2.
- XML (external interfaces).

Any exceptions to the Electronic File Format requirements above must be approved in writing by the CAM. The CAM will consult with the CEC's Information Technology Services Branch to determine whether the exceptions are allowable.

**MEETINGS**

**Subtask 1.2 Kick-off Meeting**

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

**The Recipient shall:**

- Attend a "Kick-off" meeting with the CAM, and other CEC staff relevant to the Agreement. The Recipient's Project Manager and any other individuals deemed

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

necessary by the CAM or the Project Manager shall participate in this meeting. The administrative and technical aspects of the Agreement will be discussed at the meeting. Prior to the meeting, the CAM will provide an agenda to all potential meeting participants. The meeting may take place in person or by electronic conferencing (e.g., Teams, Zoom), with approval of the CAM.

The Kick-off meeting will include discussion of the following:

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
  - An updated Project Schedule;
  - Terms and conditions of the Agreement;
  - Invoicing and auditing procedures;
  - Travel;
  - Equipment purchases;
  - Administrative and Technical products (subtask 1.1);
  - CPR meetings (subtask 1.3);
  - Monthly Calls (subtask 1.5)
  - Quarterly Progress reports (subtask 1.6)
  - Final Report (subtask 1.7)
  - Match funds (subtask 1.8);
  - Permit documentation (subtask 1.9);
  - Subawards(subtask 1.10);
  - Technical Advisory Committee meetings (subtasks 1.11 and 1.12);
  - Agreement changes;
  - Performance Evaluations; and
  - Any other relevant topics.
- Provide *Kick-off Meeting Presentation* to include but not limited to:
    - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
    - Project schedule that identifies milestones
    - List of potential risk factors and hurdles, and mitigation strategy
  - Provide an *Updated Project Schedule, Match Funds Status Letter, and Permit Status Letter*, as needed to reflect any changes in the documents.

**The CAM shall:**

- Designate the date and location of the meeting.
- Send the Recipient a *Kick-off Meeting Agenda*.

**Recipient Products:**

- Kick-off Meeting Presentation
- Updated Project Schedule (*if applicable*)
- Match Funds Status Letter (subtask 1.7) (*if applicable*)
- Permit Status Letter (subtask 1.8) (*if applicable*)

**CAM Product:**

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- Kick-off Meeting Agenda

**Subtask 1.3 Critical Project Review (CPR) Meetings**

The goal of this subtask is to determine if the project should continue to receive CEC funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient and may include the Commission Agreement Officer and any other individuals selected by the CAM to provide support to the CEC.

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit. However, the CAM may schedule additional CPR meetings as necessary. The budget may be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the CEC, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

**The Recipient shall:**

- Prepare and submit a *CPR Report* for each CPR meeting that: (1) discusses the progress of the Agreement toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project.
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

**The CAM shall:**

- Determine the location, date, and time of each CPR meeting with the Recipient's input.
- Send the Recipient a *CPR Agenda* with a list of expected CPR participants in advance of the CPR meeting. If applicable, the agenda may include a discussion of match funding and permits.
- Conduct and make a record of each CPR meeting. Provide the Recipient with a schedule for providing a Progress Determination on continuation of the project.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, or budget for the remainder of the Agreement. A determination of unsatisfactory progress may result in project delays, including a potential Stop Work Order, while the CEC determines whether the project should continue.
- Provide the Recipient with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Recipient revise one or more products.

**Recipient Products:**

- CPR Report(s)

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**CAM Products:**

- CPR Agenda(s)
- Progress Determination

**Subtask 1.4 Final Meeting**

The goal of this subtask is to complete the closeout of this Agreement.

**The Recipient shall:**

- Meet with CEC staff to present project findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement. This meeting will be attended by the Recipient and CAM, at a minimum. The meeting may occur in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.

The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the CAM's discretion.

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM of the following Agreement closeout items:
  - Disposition of any procured equipment.
  - The CEC's request for specific "generated" data (not already provided in Agreement products).
  - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
  - "Surviving" Agreement provisions such as repayment provisions and confidential products.
  - Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide copies of *All Final Products* organized by the tasks in the Agreement.

**Products:**

- Final Meeting Agreement Summary (*if applicable*)
- Schedule for Completing Agreement Closeout Activities
- All Final Products

**MONTHLY CALLS, REPORTS AND INVOICES**

**Subtask 1.5 Monthly Calls**

The goal of this task is to have calls at least monthly between the CAM and Recipient to verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.



**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

The objectives of this task are to verbally summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted or the CAM determines that a monthly call is unnecessary.

**The CAM shall:**

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during call.

**The Recipient shall:**

- Review the questions provided by CAM prior to the monthly call
- Provide verbal answers to the CAM during the call.

**Product:**

- Email to CAM concurring with call summary notes.

**Subtask 1.6 Quarterly Progress Reports and Invoices**

The goals of this subtask are to: (1) periodically verify that satisfactory and continued progress is made towards achieving the project objectives of this Agreement; and (2) ensure that invoices contain all required information and are submitted in the appropriate format.

**The Recipient shall:**

- Submit a *Quarterly Progress Report* to the CAM. Each progress report must:
  - Summarize progress made on all Agreement activities as specified in the scope of work for the reporting period, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at: <https://www.energy.ca.gov/media/4691>
- Submit a monthly or quarterly *Invoice* on the invoice template(s) provided by the CAM.

**Recipient Products:**

- Quarterly Progress Reports
- Invoices

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**CAM Product:**

- Invoice template

**Subtask 1.7 Final Report**

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

**Subtask 1.7.1 Final Report Outline**

**The Recipient shall:**

- Prepare a *Final Report Outline* in accordance with the *Energy Commission Style Manual* provided by the CAM.

**Recipient Products:**

- Final Report Outline (draft and final)

**CAM Products:**

- Energy Commission Style Manual
- Comments on Draft Final Report Outline
- Acceptance of Final Report Outline

**Subtask 1.7.2 Final Report**

**The Recipient shall:**

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission Style Manual, and Final Report Template provided by the CAM with the following considerations:
  - Ensure that the report includes the following items, in the following order:
    - Cover page (**required**)
    - Credits page on the reverse side of cover with legal disclaimer (**required**)
    - Acknowledgements page (optional)
    - Preface (**required**)
    - Abstract, keywords, and citation page (**required**)
    - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
    - Executive summary (**required**)
    - Body of the report (**required**)
    - References (if applicable)
    - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
    - Bibliography (if applicable)
    - Appendices (if applicable) (Create a separate volume if very large.)
    - Attachments (if applicable)
- Submit a draft of the Executive Summary to the TAC for review and comment.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- Develop and submit a *Summary of TAC Comments on Draft Final Report* received on the Executive Summary. For each comment received, the Recipient will identify in the summary the following:
  - Comments the Recipient proposes to incorporate.
  - Comments the Recipient does propose to incorporate and an explanation for why.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

**Products:**

- Summary of TAC Comments on Draft Final Report
- Draft Final Report
- Written Responses to Comments (*if applicable*)
- Final Report

**CAM Product:**

- Written Comments on the Draft Final Report

**MATCH FUNDS, PERMITS, AND SUBAWARDS**

**Subtask 1.8 Match Funds**

The goal of this subtask is to ensure that the Recipient obtains any match funds planned for this Agreement and applies them to the Agreement during the Agreement term.

While the costs to obtain and document match funds are not reimbursable under this Agreement, the Recipient may spend match funds for this task. The Recipient may only spend match funds during the Agreement term, either concurrently or prior to the use of CEC funds. Match funds must be identified in writing, and the Recipient must obtain any associated commitments before incurring any costs for which the Recipient will request reimbursement.

**The Recipient shall:**

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the application that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

If match funds were a part of the application that led to the CEC awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
  - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
- If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

**Products:**

- Match Funds Status Letter
- Supplemental Match Funds Notification Letter (*if applicable*)
- Match Funds Reduction Notification Letter (*if applicable*)

**Subtask 1.9 Permits**

The goal of this subtask is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track. Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement, with the exception of costs incurred by University of California recipients. Permits must be identified and obtained before the Recipient may incur any costs related to the use of the permit(s) for which the Recipient will request reimbursement.

**The Recipient shall:**

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:
  - A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
  - The schedule the Recipient will follow in applying for and obtaining the permits.

The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

**Products:**

- Permit Status Letter
- Updated List of Permits (*if applicable*)
- Updated Schedule for Acquiring Permits (*if applicable*)
- Copy of Each Approved Permit (*if applicable*)

**Subtask 1.10 Obtain and Execute Subawards and Agreements with Site Hosts**

The goal of this task is to ensure quality products and to execute site host agreements and sub awards, as applicable, required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement and contracting policies and procedures.

**The Recipient shall:**

- Execute and manage subawards and coordinate subrecipient activities.
- Execute and manage site host agreements, and ensure the right to use the project site throughout the term of the Agreement, as applicable. A site host agreement is not required if the Recipient is the site host.
- Notify the CEC in writing immediately, but no later than five calendar days, if there is a reasonable likelihood the project site cannot be acquired or can no longer be used for the project.
- Submit a letter to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required.
- If requested by the CAM, submit a draft of each subaward and any site host agreement required to conduct the work under this Agreement to the CAM for review.
- If requested by the CAM, submit a final copy of each executed subaward and any site host agreement.
- If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

**Products:**

- Letter describing the subawards needed, or stating that no subawards are required
- Draft subaward (if requested)
- Final subaward (if requested)
- Draft site host agreement (if requested)
- Final site host agreement (if requested)

**TECHNICAL ADVISORY COMMITTEE**

**Subtask 1.11 Technical Advisory Committee (TAC)**

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

The goal of this subtask is to create an advisory committee for this Agreement. The TAC should be composed of diverse professionals. The composition will vary depending on interest, availability, and need. TAC members will serve at the CAM's discretion. The purpose of the TAC is to:

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
  - Technical area expertise;
  - Knowledge of market applications; or
  - Linkages between the Agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.
- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate, to the extent the TAC members feel is appropriate, on behalf of the project in its effort to build partnerships, governmental support, and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.

The TAC may be composed of qualified professionals spanning the following types of disciplines:

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Public interest market transformation implementers;
- Product developers relevant to the project;
- U.S. Department of Energy research managers, or experts from other federal or state agencies relevant to the project;
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

**The Recipient shall:**

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list will be

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.

- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.12.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

**Products:**

- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

**Subtask 1.12 TAC Meetings**

The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held via teleconference.

**The Recipient shall:**

- Discuss the TAC meeting schedule with the CAM at the Kick-off meeting. Determine the number and location of meetings (in-person and via teleconference) in consultation with the CAM.
- Prepare a *TAC Meeting Schedule* that will be presented to the TAC members during recruiting. Revise the schedule after the first TAC meeting to incorporate meeting comments.
- Prepare a *TAC Meeting Agenda* and *TAC Meeting Back-up Materials* for each TAC meeting.
- Organize and lead TAC meetings in accordance with the TAC Meeting Schedule. Changes to the schedule must be pre-approved in writing by the CAM.
- Prepare *TAC Meeting Summaries* that include any recommended resolutions of major TAC issues.

**The TAC shall:**

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**Products:**

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)
- TAC Meeting Back-up Materials
- TAC Meeting Summaries

**Subtask 1.13 Project Performance Metrics**

The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

**The Recipient shall:**

- Complete and submit the project performance metrics section of the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
  - TAC comments the Recipient proposes to incorporate into the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
  - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the Recipient met each of the performance metrics in the *Final Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
- Discuss the *Project Performance Metrics Results* at the Final Meeting.

**Products:**

- TAC Performance Metrics Summary
- Project Performance Metrics Results



**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

**IV. TECHNICAL TASKS**

**TASK 2 GRID-FLEXIBLE SOLUTION DEVELOPMENT**

The goals of this task are to develop a grid flexible measure package, implement the measure package, develop semantic modeling building assessment tools, and develop Measurement and Verification (M&V) and forecasting methodology.

**The Recipient shall:**

- Develop an open-source grid flexible measure package that addresses interoperability challenges and promotes standardization and document in a *Grid-Flexible Measure Initial Report*. The DR measure package uses protocols Project Haystack/Brick/223P, BACnet 135, and implements American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guideline 36 among other measures such as:
  - Reduce variable air volume (VAV) box minimums (“dispatchable airflow management”);
  - Setback thermostat setpoints based on ASHRAE G36;
  - EV Managed charging; and
  - Leverage current best practices in lighting, HVAC, and water heating DR measures.
- Work with building data software and system integrator vendors to develop a supervisory software layer with semantic model (Haystack tagging) and open Application Programming Interfaces (APIs), and document in an *Integration Memo*, to:
  - Create new algorithms, analytics, and asset / point level data modeling associated with demand control measures in a way that can be contributed to open libraries and existing ontologies (e.g., standard Niagara programming); and
  - Develop integrations of the measure package with any necessary APIs or other open protocols for EV Charging Systems, Thermostats, Lighting systems, sensors, and so on; and
  - Build integration with CEC’s MIDAS.
- Automate screening/initial assessment and ongoing building monitoring using semantic model, and document findings in a *Semantic Model Building Assessment Tool Report*.
- Develop M&V plan and forecasting methodology and report in a *Measurement and Verification Plan*
- Conduct a CPR meeting and prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).

**Products:**

- Grid-Flexible Measure Initial Report
- Integration Memo
- Semantic Model Building Assessment Tool Report
- Measurement and Verification Plan
- CPR Report #1

**TASK 3 DEMONSTRATION OF GRID FLEXIBLE SUPERVISORY CONTROL**

## **Exhibit A**

### **Scope of Work**

#### **The Regents of the University of California, on behalf of the Berkeley campus**

The goal of this task is to demonstrate the grid flexible system in multiple buildings and EV chargers, showing the capability to interface with existing utility programs and using the MIDAS price signal.

#### **The Recipient shall:**

- Demonstrate the measure package and assessment/implementation process in up to 10 buildings on the Regents of the University of California, on behalf of the Irvine campus and American Honda Motor Co., Inc. campuses:
  - Identify and screen potential buildings.
  - Set up Niagara and SkySpark infrastructure hosted on Amazon Web Services. and Integrate M&V and forecasting methods.
  - Deploy solution, showing building load reduction by at least 10% during the site's monthly peak hour in summer months and at least 5% during winter months.
  - Document the results and conclusions in the *Grid Flexible Demonstration Winter Memo* and *Grid Flexible Demonstration Summer Memo*. Iterate as needed (as determined by the CAM).
- Conduct a CPR meeting and prepare a *CPR Report #2* in accordance with subtask 1.3 (CPR Meetings).
- Prepare *Grid Flexible M&V Evaluation Report* that discusses, but is not limited to, the following:
  - Validation of the capability to interface with existing utility program and/or using the MIDAS price signal.
  - Demonstration M&V plan evaluation:
    - grid flexible capability
    - reliability/timeliness of communication
    - satisfaction of occupants, building managers, and stakeholders
    - cost-effectiveness analysis.
- Develop Investor-owned Utility (IOU) Agreement with at least one building site for a DR utility program.

#### **Products:**

- Grid Flexible Demonstration Winter Memo
- Grid Flexible Demonstration Summer Memo
- CPR Report #2
- Grid Flexible M&V Evaluation Report

#### **TASK 4 MARKET DEPLOYMENT**

The goal of this task is to overcome barriers to scale and facilitate market adoption by partnering with industry master system integrator and relevant support software vendor products to incorporate research findings into product offerings, recommend strategies, tools and incentives, and introduce demand flexible algorithms into standards.

#### **The Recipient shall:**

- Prepare a *Market Assessment Report* documenting a market assessment (literature review, interviews with original equipment manufacturers/ building owners, and collect

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

learnings from demonstrations) to determine market potential and technical and market barriers.

- Partner with master system integrator (industry standard enterprise portfolio supervisory control system) representative of market deployment pathway.
  - Collaborate with at least one additional System Integrators or supervisory control vendor to implement the solution in their product offerings.
  - Develop process for how others could adopt this measure in their own product offerings and how the team could support sustained market adoption.
  - Identify process in *Super GX Market Deployment Report*.
- Develop and publish online *Grid Flexible Tools* that recommends strategies, tools, and initiative to address market barriers. Package market tools may include, but is not limited to, a tool to assess a building potential and determine VAV min overrides from BAS trends.
- Produce content to aid market transformation (*Podcast, Video*, etc.).
- Make recommendations for further market transformation through utility programs, codes, and standards, including developing DR algorithms as addendum proposals for ASHRAE Guideline 36. Contribute to open standards development by developing new definitions in semantic tagging ontology for DR. Document in *Market Transformation Recommendations Memo*.
- Conduct a CPR meeting and prepare a *CPR Report #3* in accordance with subtask 1.3 (CPR Meetings).

**Products:**

- Market Assessment Report
- Super GX Market Deployment Report
- Grid Flexible Tools
- Podcast and/or Video Aiding Market Transformation
- Market Transformation Recommendation Memo
- CPR Report #3

**TASK 5 COMMUNITY BENEFIT DEVELOPMENT**

The goal of this task is to work with established communities to promote value of project to end users, building managers and operators, owners, and utilities.

**The Recipient shall:**

- Reach out to community organizations (sustainability officers at the city, region, and county level; schools (school districts, community colleges with HVAC training programs)); and labor organizations/unions to determine best approach for education and training outreach. Host at least one outreach workshop and document in *Outreach Workshop Memo*.
- Develop and deliver education material for controls contractors, building owners, and decision-makers on overall benefits of measure adoption and implementation. Post *Grid Flexible Benefits* material in online forum.

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

- Develop and deliver training for building operators and facility managers through IOU training centers: how to use data analytics, how to use BAS for Grid Interactive Efficient Buildings, how to use the supervisory controls. Document *Grid Flexible Control Curriculum*.

**Products:**

- Outreach Workshop Memo
- Grid Flexible Benefits
- Grid Flexible Control Curriculum

**TASK 6: EVALUATION OF PROJECT BENEFITS**

The goal of this task is to report the benefits resulting from this project.

**The Recipient shall:**

- Complete the *Initial Project Benefits Questionnaire*. The Initial Project Benefits Questionnaire shall be initially completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the *Annual Survey* by January 31st of each year. The Annual Survey includes but is not limited to the following information:
  - Technology commercialization progress
  - New media and publications
  - Company growth
  - Follow-on funding and awards received
- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the questionnaire drafts.
- Complete and update the project profile on the CEC's public online project and Recipient directory on the [Energize Innovation website \(www.energizeinnovation.fund\)](http://www.energizeinnovation.fund), and provide *Documentation of Project Profile on EnergizeInnovation.fund*, including the profile link.
- If the Prime Recipient is an Innovation Partner on the project, complete and update the organizational profile on the CEC's public online project and recipient directory on the [Energize Innovation website \(www.energizeinnovation.fund\)](http://www.energizeinnovation.fund), and provide *Documentation of Organization Profile on EnergizeInnovation.fund*, including the profile link.

**Products:**

- Initial Project Benefits Questionnaire
- Annual Survey(s)
- Final Project Benefits Questionnaire
- Documentation of Project Profile on EnergizeInnovation.fund
- Documentation of Organization Profile on EnergizeInnovation.fund

**TASK 7 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES**

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley campus**

The goal of this task is to ensure the technological learning that resulted from the demonstration(s) is captured and disseminated to the range of professions that will be responsible for future deployments of this technology or similar technologies.

**The Recipient Shall:**

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, construction, commissioning, and operation of the technology or system being demonstrated. The Project Case Study Plan should include:
  - An outline of the objectives, goals, and activities of the case study.
  - The organization that will be conducting the case study and the plan for conducting it.
  - A list of professions and practitioners involved in the technology's deployment.
  - Specific activities the recipient will take to ensure the learning that results from the project is disseminated to those professions and practitioners.
  - Presentations/webinars/training events to disseminate the results of the case study.
- Present the draft *Project Case Study Plan* to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the draft *Project Case Study Plan*. This document will identify:
  - TAC comments the Recipient proposes to incorporate into the final *Technology Transfer Plan*.
  - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Submit the final *Project Case Study Plan* to the CAM for approval.
- Execute the final Project Case Study Plan and develop and submit a Project Case Study.
- When directed by the CAM, develop presentation materials for a CEC sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California CEC.
- Provide at least (6) six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

**Products:**

- Project Case Study Plan (draft and final)
- Summary of TAC Comments
- Project Case Study (draft and final)
- High Quality Digital Photographs

**Exhibit A**  
**Scope of Work**  
**The Regents of the University of California, on behalf of the Berkeley**  
**campus**

**V. PROJECT SCHEDULE**

Please see the attached Excel spreadsheet.