California Energy Commission
December 11, 2024, Business Meeting
Backup Materials for Weave Grid, Inc.

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: 24-1211-03I

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Weave Grid, Inc.

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-24-023 with Weave Grid, Inc. for a $2,455,187 grant, and adopting staff's determination that this action is exempt from CEQA. This agreement will demonstrate a smart charging platform at sites in Los Angeles County to optimize EVcharging schedules based on local distribution grid constraints and bulk grid benefits. The demonstration will also show how software optimization of EV battery discharge capabilities with bidirectional equipment can provide further local distribution grid value; 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 December 11, 2024.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

_____
Kristine Banaag
Secretariat

STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

CEC-270 (Revised 01/2024)

GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: EPC-24-023

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Katelynn Dinius
3. MS-:51
4. Phone Number: 916-776-3468

C. Recipient's Information

1. Recipient's Legal Name: Weave Grid, Inc.
2. Federal ID Number: 83-2785785

D. Title of Project

Title of project: Residential EV Deferred Distribution Upgrade Project (REVDDUP)

E. Term and Amount

1. Start Date: 1/8/2025
2. End Date: 12/31/2027
3. Amount: $2,455,187.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 12/11/2024 .
3. Consent or Discussion? Consent
4. Business Meeting Presenter Name: Katelynn Dinius
5. Time Needed for Business Meeting: 0 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge). **Agenda**

Item Subject and Description:
WEAVE GRID, INC. Proposed resolution approving agreement EPC-24-023 with Weave Grid, Inc. for a $2,455,187 grant, and adopting staff's determination that this action is exempt from CEQA. This agreement will demonstrate a smart charging platform at sites in Los Angeles County to optimize EV-charging schedules based on local distribution grid constraints and bulk grid benefits. The demonstration will also show how software optimization of EV battery discharge capabilities with bidirectional equipment can provide further local distribution grid value. (EPIC Funding) Contact: Katelynn Dinius

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, sec. 15301

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 approximately 20 locations affected by the proposed project are at existing facilities, which have already been graded, disturbed, paved, and have structures constructed. Installation and deployment of the dynamic load management solution will require limited alteration activities such as installation of electric vehicle supply equipment inside residential homes. 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.

Common Sense Exemption? 14 CCR 15061 (b) (3)
No

If yes, explain reason why Agreement is exempt under the above section: Not applicable.

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
Lawrence Berkeley National Laboratory	$ 300,000	**$**0
Valley Clean Air Now	$ 147,700	**$**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
TBD- EVSE Install (Residential)	**$**170,500	**$**0

TBD- EVSE Install (Commercial)	$102,300	$0
TBD- Gift Cards	$530,000	$0
TBD - EV Charger Installation Contractor	$130,000	$0
Southern California Edison Company	$0	$750,000
TBD - Educational material development	$22,700	$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
No key partners to report

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	$ 2,455,187

TOTAL Amount: $ 2,455,187

R&D Program Area: ESB: Transportation

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: Luna Ascha

Address: 375 Alabama St Ste 325

City, State, Zip: San Francisco, CA 94110-7334

Phone: 415-913-7029

E-Mail: luna@weavegrid.com

3. Recipient's Project Manager

Name: Luna Ascha

Address: 375 Alabama St Ste 325

City, State, Zip: San Francisco, CA 94110-7334

Phone: 415-913-7029

E-Mail: luna@weavegrid.com

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-23-306
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	Yes
5	Awardee CEQA Documentation	Yes

Approved By

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

Agreement Manager: Katelynn Dinius

Approval Date: 10/1/2024

Branch Manager: Reynaldo Gonzalez

Approval Date: 10/4/2024

Director: Reynaldo Gonzalez for Jonah Steinbuck

Approval Date: 10/4/2024

ATTACHMENT 4
Scope of Work
Weave Grid, Inc.

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR	Task Name
1		General Project Tasks
2		Platform Setup and Recruitment
3	X	Distribution Optimized Charging
4		Bidirectional Optimized Charging
5	X	Workforce Development
6		Modeling, Analysis and Evaluation
7		Evaluation of Project Benefits
8		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AMI	Advanced Metering Infrastructure
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CBO	Community Based Organization
CEC	California Energy Commission
CPR	Critical Project Review
CSAT	Customer Satisfaction Score
DAC	Disadvantaged Community
DISCO	Distribution Integrated Smart Charging Orchestration
EV	Electric Vehicle
EV Driver	Customers who drive a plug-in battery electric vehicle with an eligible vehicle make and model and/or EVSE that can charge at home in its service territory
EVSE	Electric Vehicle Supply Equipment
IOU	Investor Owned Utility
LIC	Low Income Community
Program	Program refers to the customer facing offering to participate in the managed charging and/or bidirectional phase activities under the Residential EV Deferred Distribution Upgrade Project
Recipient	Weave Grid, Inc.
SB	Senate Bill
TAC	Technical Advisory Committee
V2H	Vehicle-to-Home
V2X	Vehicle-to-Everything

Acronym/Term	Meaning
ZEV	Zero Emission Vehicle

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the demonstration of dynamic management of residential participant electric vehicle (EV) charging loads to avoid or defer costly customer and distribution grid upgrades while meeting participant needs. The demonstration will also show how software optimization of EV battery discharge capabilities for a subset of participants with bidirectional equipment can provide further distribution system value. This demonstration will be targeting deployments within Low Income Communities (LICs) and Disadvantaged Communities (DACs).

B. Problem/ Solution Statement

Problem

Rapid EV adoption poses a unique challenge for utilities, as distribution infrastructure was not built with widespread EV charging in mind. EV charging can be very clustered and unpredictable, resulting in unexpected large loads and peak demands. Consider a neighborhood with high EV adoption, where each Level 2 charger doubles the peak load of each home. When several EVs start charging at the same time, the total load may push the local transformer servicing the neighborhood beyond its operating threshold. This could lead to conditions that trigger accelerated aging, and in extreme cases, temporary outages or asset failure.

If left unmanaged, growing EV charging load can pose a significant risk to grid resiliency and can lead to increased costs for distribution system upgrades. A recent study commissioned by the California Public Utilities Commission found that upgrading distribution infrastructure over the next decade could cost $50 billion, but a subsequent study found that managed charging could help lower costs to $26 billion. Furthermore, it can take years to address specific grid constraints depending on the solution being used, and associated challenges, such as supply chain constraints, permitting, and labor shortages.

Solution

Weave Grid, Inc. (Recipient) has previously developed a novel and patented solution called Distribution Integrated Smart Charging Orchestration (DISCO), which is a platform that focuses on distribution-level optimization of EV charging. DISCO can integrate with a utility's operational system to establish dynamic awareness of local distribution and bulk system constraints. With that system awareness, DISCO continuously optimizes EV charging schedules to protect the

local distribution system, support grid resiliency, and capture bulk system benefits, while also meeting the mobility needs of EV Drivers.

In addition to optimizing for the distribution system, the Recipient will offer DISCO's bidirectional charging management to residential customers with eligible equipment to demonstrate the Vehicle-to-Everything (V2X) use case. In a V2X setting, DISCO will draw electricity from the battery of a plugged-in EV and dispatch the power to offset the load of the residential home. Dispatching electricity from an EV battery can also provide backup power to the home in the event of a planned or unplanned outage.

C. Goals and Objectives of the Agreement

Agreement Goals

- Demonstrate and validate the value of Recipient's DISCO product in managing residential EV charging for grid constraints, such that more EVs can be served by distribution assets without infrastructure upgrades.
- Validate that bidirectional charging can be leveraged to dispatch power to offset the load of a residential home in a V2X use case.
- Engage residents of DACs and LICs and offer benefits, including financial incentives/rebates for participation in the project, as well as V2X equipment and installation work for greater access to transportation electrification technologies and benefits.
- Work with Community Based Organization (CBO) partner to develop a workforce development course module that focuses on relevant job skills for bidirectional equipment field technicians, maintenance or install support careers.

Ratepayer Benefits:[1]
This Agreement will enable the demonstration of a technology that will unlock significant benefits to ratepayers, including increased grid resiliency, lower costs from avoided infrastructure upgrades, and more zero-emission vehicles (ZEVs) on the road. If proven to be effective, DISCO can be a key tool for utilities to prepare for rapid vehicle electrification by enabling more EVs to charge on existing grid infrastructure.

The Agreement endeavors to increase the number of EV drivers in DACs and LICs, not only to improve technology access but also because the pollution burden tends to be greater in these communities. Research has shown that even a small increase in the share of EVs can reduce health impacts from transportation pollution. A recent study showed that for every 20 ZEVs per 1,000 people in a given zip code there was a 3.2% drop in emergency room visits due to asthma.[2]

[1] 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).

[2] Erik Garcia et al. "California's early transition to electric vehicles: Observed health and ir quality co-benefits," Science of the Total Environment Volume 867, April 2023.

Technological Advancement and Breakthroughs:[3]

This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by managing EV charging schedules to promote grid resiliency and protect the distribution system, while also capturing bulk system benefits and meeting the mobility needs of EV customers. This project aligns with California's ambitious goals, including achieving 100% clean energy by 2045 (Senate Bill (SB) 100) and reducing greenhouse gas emissions to 40% below 1990 levels by 2030 (SB 32). The Agreement will also push forward the demonstration and deployment of bidirectional charging for residential customers. Optimization for bidirectional charging will be demonstrated in the project to enable a V2X use case for residential customers, facilitating energy storage and grid support. This supports California's policy goals under SB 676, which emphasizes the integration of EVs into the grid to maximize economic, social, and environmental benefits. The project will provide backup power in the event of planned or unplanned outages, enhancing energy security and resilience for California's communities.

Agreement Objectives

The objectives of this Agreement are to:

- Enroll up to 3,000 EV participants within the target project locations, with at least 900 of these EV participants residing in DACs and LICs.
- Install up to 20 bidirectional chargers for residential customers in DACs and LICs and enroll them in the pilot.
- Demonstrate and validate the value of Recipient's DISCO product in managing residential EV charging for grid constraints.
- Validate that bidirectional charging can be leveraged in coordination with the DISCO platform to dispatch power to offset the load of a residential home in a vehicle-to-home use case.
- Train the local workforce to prepare for a V2X future in which energy can be dispatched from EV batteries to support home and grid needs.

I. 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

[3] 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.

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:

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 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:
- 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 CAO 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 This 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)

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.

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

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.
- 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. 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.
    - 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.
- 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 Subawards

The goals of this subtask are to: (1) procure subawards required to carry out the tasks under this Agreement; and (2) ensure that the subawards are consistent with the terms and conditions of this Agreement.

The Recipient shall:

- Manage and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subaward.
- Include any required Energy Commission flow-down provisions in each subaward, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subaward terms.
- If requested by the CAM, submit a draft of each *Subaward* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed subaward.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding of subrecipient additions in the terms and conditions).

Products:

- Subawards *(if requested by the CAM)*

TECHNICAL ADVISORY COMMITTEE

Subtask 1.11 Technical Advisory Committee (TAC)

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 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* for each TAC Meeting 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.

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

III. TECHNICAL TASKS

TASK 2: PLATFORM SET-UP AND RECRUITMENT

The goals of this task are to establish a mechanism by which EV Drivers can interact with the EV Driver platform, actively market to the EV Drivers for participation in the project, and performing regular surveys of the enrolled EV Drivers to better understand their level of satisfaction with the solutions delivered by the Program.

Subtask 2.1 End User Portal and Communication Services

The goal of this subtask is to provide a driver-facing platform experience that includes: a Program landing page, a guided enrollment process for EV Drivers, a dashboard for EV Drivers that enroll and get accepted in the Programs ("Accepted EV Drivers"), and various communications to customers.

The Recipient shall:

- Develop a Recipient-Investor Owned Utility (IOU) co-branded website landing page for EV Drivers to enable enrollment in the Program incorporating the IOU's brand features. The landing page should include, but is not limited to, the following:
    - Basic information for EV Drivers that seek to learn more about the Program, including a Program description and frequently asked questions.
- Develop an end user portal to onboard EV Drivers and offer benefits, such as a dashboard to view charging data, estimated charging costs. The portal should include, but is not limited to, the following features:
    - Present applicable program terms and conditions for participating in the program to the EV Driver and provide a means for accepting them. If the EV Driver does not agree to the terms and conditions for participation, the EV Driver will not be eligible to participate in the Program, and their application will not be able to be completed and submitted.
    - Collect enrollment data to validate that the EV Driver is eligible for participation in the Program and enable the Recipient to collect data from the Accepted EV Driver and manage their EV or Electric Vehicle Supply Equipment (EVSE).
    - Provide Accepted EV Drivers with the option not to participate in any recommended charging schedule established by the Recipient. Accepted EV Drivers can override the recommended charging schedule through Recipient's end user portal, via SMS text, or through their OEM app.
    - Provide a dedicated "driver dashboard" for Accepted EV Drivers to manage their inputs and preferences to inform optimized charging (as applicable)
- Develop an end user support webpage that will provide end user support contact information to allow the Accepted EV Driver or EV Driver to inquire further about the Program or about the status of their enrollment.
- Develop a *Platform Set-up and Recruitment Report* showcasing the environment which has been established to support driver interactions for this project, including the website landing page for EV drivers, end user portal, and end user support page.

Products:

- Platform Set-up and Recruitment Report

Subtask 2.2 Driver Marketing and Recruitment
The goal of this subtask is to work collaboratively with an IOU on marketing the Program to EV Drivers within the IOU's territory to support EV Driver recruitment.

The Recipient shall:

- Develop a *Marketing Plan* to engage and recruit EV Drivers in target communities, which will include, but is not limited to:
    - DACs to target and focused recruitment efforts on enrolling EV Drivers from those DACs.
    - Strategy to CBOs to support community engagement.
    - Planned marketing channels to leverage for marketing campaigns
- Include "calls to action" for drivers to apply to the Program on prominent IOU webpages, as agreed to on an IOU basis.
- Launch marketing campaigns for the Program directed to potential EV Drivers. Campaigns may leverage email, webpage, social media, in-person events, and other marketing channels.
- Coordinate with IOU partner to distribute pre-owned/used EV rebates from IOU partner for income-qualified customers and home panel or circuit upgrade rebates for select income-qualified customers whose homes must be upgraded to support networked charging equipment.
- Develop *Rebates Report* that includes, but is not limited to, eligible equipment criteria, accompanying rebates, and the number of rebates distributed to eligible participants.
- Engage with CBO partner to support community engagement and education efforts as well as supporting recruitment to the project, while connecting eligible customers to available incentives.
- Pay enrollment incentives to participants upon enrollment in the Program (i.e., participants must enroll their eligible device, either an EV equipped with compatible onboard telematics or eligible charger, and enable data and controls connection with the Recipient's technology platform).
- Track EV Driver enrollment against predetermined enrollment targets.
- Develop *Enrollment Report* that includes, but is not limited to, the enrolled participant count, with number, type/class, and make of vehicles used, as permitted per IOU's security policy.
- Determine how the participation incentive will be distributed (e.g., X amount every 6 months with one or both distributions dependent on completion of the annual survey and/or a participation threshold, X amount once a year), and discuss the optimal distribution incentive strategy with partner utility and CBO.
- Pay participation incentives to participants for the time, data access, and charging load flexibility offered in the Project.
- Develop *Incentives Report* that includes, but is not limited to, incentives paid to participants (anonymized and with personally identifiable information removed).

Products:

- Marketing Plan
- Rebates Report
- Enrollment Report
- Incentives Report

Subtask 2.3 - Customer Satisfaction Surveys
The goal of this subtask is to provide regular, standardized customer satisfaction surveys for participants in the project. The survey method shall align with industry standard "Customer Satisfaction Score" or "CSAT" scoring methods and will request feedback from participants on how satisfied customers are with Recipient's products and/or services in the project.

Recipient Shall:
- Conduct regular CSAT surveys to solicit feedback from participants of the project.
- Provide documentation of CSAT survey results and average CSAT score results conducted annually, or at a cadence to be mutually agreed between Recipient and CEC, in a *CSAT Results Report*.

Products:
- CSAT Results Report

TASK 3: DISTRIBUTION OPTIMIZED CHARGING
The goal of this task is to enable and demonstrate the ability of an active EV managed charging solution to mitigate the negative impacts to the distribution grid associated with increases in EV charging loads.

Subtask 3.1 Grid Topology
The goal of this subtask is to map and configure enrolled EVs and EVSEs to align with the distribution assets serving the EV drivers

The Recipient shall:
- Collaborate with the IOU to develop a *List of Target Distribution Assets,* as permitted per the IOU's security policy, that identifies distribution assets (e.g. substations and feeders) that service electricity in target DAC regions.
- Develop a *Vehicle Groupings Report* to group enrolled EVs and EVSEs to align with the distribution assets serving the EV drivers, as permitted per the IOU's security policy.
- Configure a relationship mapping between the identified distribution assets and the service accounts of enrolled EV Drivers.
- Configure a relationship mapping between distribution assets that are connected to one another in the grid topology. For example, a secondary transformer may be connected to a feeder which is connected to a substation.
- As new EV drivers enroll in the Program, ensure that they are assigned to the correct group.

Products:
- List of Target Distribution Assets
- Vehicle Groupings Report

Subtask 3.2 Load Balancing
The goal of this subtask is to decrease aggregate peak EV charging load of each group.

The Recipient shall:

- Apply an optimization strategy, referred to as load balancing, to the created vehicle groups with the goal of minimizing the aggregate peak EV charging load of each group and provide an *Evidence of Load Balancing Report*.
- Develop an *Estimated Peak Reduction from Load Balancing Report* that provides an estimated reduction of peak (kW) from the vehicle groups managed.
- Track and report on charging data from participating EVs and EVSEs so that the impact of load balancing can be calculated and modeled in subsequent subtasks.

Products:

- Evidence of Load Balancing Report
- Estimated Peak Reduction from Load Balancing Report

Subtask 3.3 Static Advanced Metering Infrastructure Integration
The goal of this subtask is to manage EV charging load to avoid peaks when stacked onto a static asset load profile.

The Recipient shall:

- Collaborate with the IOU to define a static load profile for each of the identified distribution assets, as permitted by IOU's security policy, and develop a *Static Load Profile Report*.
- Optimize EV charging schedules for each group associated with an identified distribution asset to shift charging load based on the asset's static load profile. The goal of this optimization strategy is to minimize the peak demand of the distribution asset by shifting EV charging load to avoid peaks in the static load profile.
- Develop an *Estimated Peak Reduction from Static AMI Integration Report* that provides evidence of estimated reduction of peak (kW) from the vehicle groups managed.
- Track and report on charging data from participating EVs and EVSEs so that the impact of optimizing based on a static distribution asset load profile can be calculated and modeled in subsequent subtasks.

Products:

- Static Load Profile Report
- Estimated Peak Reduction from Static AMI Integration Report

Subtask 3.4 Dynamic Advanced Metering Infrastructure Integration
The goal of this subtask is to manage EV charging to optimize for a minimized peak load on identified distribution assets.

The Recipient shall:

- Collaborate with the IOU to design dynamic advanced metering infrastructure (AMI) integration between the Recipient's platform and IOU systems that indicate load on identified distribution assets. Examples of such IOU systems include Advanced Distribution Management Systems or an enterprise Distributed Energy Resource Management System. The IOU and the Recipient will decide what system is most appropriate for the project.

- Develop an integration between the Recipient's platform and the selected IOU system to receive load profile data for identified distribution assets on a recurring basis.
- Develop *Evidence of Dynamic AMI Integration Report*.
- Optimize EV charging schedules for each group associated with an identified distribution asset to shift charging load based on the asset's load profile, as indicated by the integration with the selected IOU system. The goal of this optimization strategy is to minimize the peak demand of the distribution asset by shifting EV charging load to avoid peaks in the load profile.
- Develop an *Estimated Peak Reduction Report* that provides evidence of estimated reduction of peak (kW) from the vehicle groups managed in subsequent subtasks.
- Track and report on charging data from participating EVs and EVSEs so that the impact of optimizing based on a dynamic distribution asset load profile can be calculated and modeled.
- Prepare a *CPR Report #1* in accordance with subtask 1.3.
- Participate in a CPR meeting.

Products:
- Evidence of Dynamic AMI Integration Report
- Estimated Peak Reduction from Dynamic AMI Integration Report
- CPR Report #1

TASK 4: Bidirectional Distribution Optimized Charging
The goal of this task is to demonstrate the benefits associated with V2X optimized charging within LICs or DACs.

Subtask 4.1 Site and Participation Identification
The goal of this subtask is to identify target areas and enroll participants for V2X optimized charging.

The Recipient shall:
- Collaborate with the IOU to develop a *V2X Target Areas List* identify potential target areas for V2X optimized charging based on their location within LICs or DACs within the project area and considering grid implications.
- Collaborate with the IOU and the CBO partner to identify and enroll participants at potential installation sites within the identified target areas.
- Coordinate with the participants and the V2X equipment and installation providers to confirm that the participant's home is an eligible site.
- Educate enrolled participants on the benefits of V2X through delivered written materials and/or workshop.
- Develop a *V2X Enrollment Report* that includes, but is not limited to, anonymized documentation of the enrolled participant count, with number, type/class, and make of vehicles used, and the V2X equipment installed, as permitted per the IOU's security policy. This may be appended to the Enrollment Report defined in Subtask 2.2.

Products:
- V2X Target Areas List
- V2X Enrollment Report

Subtask 4.2 V2X Equipment Procurement and Installation
The goal of this subtask is to outline work to procure and install V2X equipment as needed.

The Recipient shall:
- Develop a *V2X Eligibility Overview Report* that defines criteria for participant eligibility and bidirectional equipment eligibility for a subset of Accepted EV Drivers within LICs and DACs to receive eligible equipment, enabling their participation in the bidirectional use-cases phase of the project.
- Collaborate with V2X equipment providers to support the purchase of V2X equipment for Accepted EV drivers.
- Collaborate with V2X equipment providers, Electric Vehicle Infrastructure Training Program certified installers, and the CBO partner to support installation of eligible equipment in the homes of Accepted EV Drivers.
- Collect photos of installed V2X equipment to provide *Evidence of V2X Installation*.

Products:
- V2X Eligibility Overview Report
- Evidence of V2X Installation

Subtask 4.3 V2X Optimization
The goal of this subtask is to describe the V2X optimization plan.

The Recipient shall:
- Outline *V2X Use Cases to* document the use cases that will be tested during the V2X optimization strategy. Example use cases are dispatching energy back to the home or to the grid directly.
- Optimize EV charging schedules for Accepted EV Drivers with installed V2X equipment to dispatch stored electricity from the vehicle during desired times and provide an *Evidence of V2X Optimization Report*.
- Collect charging data from participating EVs and EVSEs so that the impact of optimizing EV charging for V2X use cases can be calculated and modeled in subsequent subtasks.
- Collect feedback from Accepted EV Drivers participating in the V2X use cases to understand the customer experience during optimization, which will be summarized in a *V2X Feedback Report*.

Products:
- V2X Use Cases
- Evidence of V2X Optimization Report
- V2X Feedback

TASK 5: WORKFORCE DEVELOPMENT
The goal of this task is to support the training of a workforce needed to successfully scale future V2X deployments.

The Recipient shall:

- Develop a *Bidirectional Technology Course Curriculum* aimed to train workers for V2X charger installation, repair and/or maintenance activities, as relevant, that can be performed by field technicians and other equipment service job categories.
- Identify community colleges or other relevant public institutions that offer vocational training for students from LICs and DACs in the project territory, who could potentially benefit from the training course and/or training materials.
- Conduct outreach to identified community colleges and/or relevant education programs to host the course offering and develop a *List of Participating Institutions*.
- Conduct training to help prepare or educate course instructors on how to teach the material and manage exercises, as relevant, in the new course.
- Distribute the training materials and bidirectional equipment to be used for hands-on learning in the workshops at each participating campus.
- Conduct workshops to facilitate the training course for participating community colleges and/or relevant education programs.
- Develop a *Workforce Development Report* that provides evidence of trainings conducted and samples of materials developed.
- Prepare a *CPR Report #2* in accordance with subtask 1.3.
- Participate in a CPR meeting.

Products:
- Bidirectional Technology Course Curriculum
- List of Participating Institutions
- Workforce Development Report
- CPR Report #2

TASK 6: MODELING, ANALYSIS AND EVALUATION
The goal of this task is to estimate the anticipated costs of EV adoption to the distribution system and the potential deferred costs achievable with Recipient's proposed technology solution, DISCO, as applied to manage EV charging for project participants.

The Recipient shall:
- Develop *Modeling Design Report* by meeting with its proposed analysis, monitoring and evaluation partner to revisit and align on the proposed methodology to model distribution impacts and measure project performance.
- Establish a model of the distribution system in the project locations using IOU-provided grid topology data and open source data. The model will be used throughout the project to evaluate the impact of EV charging on the distribution system in different scenarios.
- In Year 1, the model will be run to predict impacts from unmanaged EV charging in this area to act as a "baseline case" or "counterfactual scenario" for the measurement and evaluation of the project.
- After deploying the managed charging treatment to enrolled participants, rerun the model with collected charging results to measure the impacts in a managed EV charging scenario.
- Calculate the impact of the managed charging treatment in comparison with the baseline case scenario developed in Year 1 of the project.
- Develop a *Final Modeling Report* that will include, but is not limited to:

- A description of the developed model and its functionality.
- A report out of the project performance metrics established, measured, and calculated.
- Calculations of the avoided costs to the distribution grid in the managed charging scenario based on associated deferred infrastructure upgrades.
- Cost-benefit analysis of the managed charging approach considering incentive levels for participant enrollment.
- Recommendations to increase deferred infrastructure costs based on the results of the modeling and observations from the Program.

Products:
- Modeling Design Report
- Final Modeling Report

TASK 7: 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), 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), 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 8: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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 *Project Case Study 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 Electric Program Investment Charge symposium(s) sponsored by the 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

IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.