



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
September 11, 2024 Business Meeting
Backup Materials for Zimeno, 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: 24-0911-12c

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION: Zimeno, 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-24-018 with Zimeno, Inc. dba Monarch Tractor for a \$1,999,992 grant. This agreement will fund the development, certification, deployment, demonstration, and data analysis of the Monarch Electrical Load Distribution system which enables intelligent electric load monitoring and critical zero-emission load support during blackouts to dwellings with 50-200+ amp service connections. The technology will be demonstrated at six family-owned farms across Fresno, San Diego, Riverside, San Luis Obispo, Calaveras, and Mendocino Counties; 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 September 11, 2024.

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-24-018

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Sean Dory
3. MS-:None
4. Phone Number: Enter Phone Number

C. Recipient's Information

1. Recipient's Legal Name: Zimeno, Inc. dba Monarch Tractor
2. Federal ID Number: 83-3527214

D. Title of Project

Title of project: Monarch Electrical Load Distribution (MELD)

E. Term and Amount

1. Start Date: 10/1/2024
2. End Date: 3/31/2027
3. Amount: \$1,999,992.00

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 9/11/2024 .
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Tanner Kural
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

Agenda Item Subject and Description:

Zimeno, Inc. Proposed resolution approving agreement EPC-24-018 with Zimeno, Inc. dba Monarch Tractor for a \$1,999,992 grant, and adopting staff's recommendation that this action is exempt from CEQA. This agreement will fund the development, certification, deployment, demonstration, and data analysis of the Monarch Electrical Load Distribution system which enables intelligent electric load monitoring and critical zero-emission load support during blackouts to dwellings with 50-200+ amp service connections. The technology will be demonstrated at six family-owned farms across Fresno, San Diego, Riverside, San Luis Obispo, Calaveras, and Mendocino Counties. (EPIC funding) Contact: Tanner Kural

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, § 15302 ;

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, § 15302 exempts projects that consist of the replacement or reconstruction of existing utility systems and facilities involving negligible or no expansion of capacity. This project involves replacing existing breaker panels with Monarch Electrical Load Distribution (MELD) systems, which will not change any purpose or capacity of the facilities. Therefore, this project is categorically exempt under Section 15302.

Additionally, this project 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 impacts on any particularly sensitive environment; 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
TBD - Electrical Installation	\$ 0	\$33,000
TBD - Electrical Engineering Consultant	\$ 0	\$25,000
TBD - Electrician	\$ 0	\$22,500
TBD - Testing and Certification	\$ 0	\$180,000
Gridtractor, A California Corporation	\$ 60,000	\$36,000
University of California Agriculture and Natural Resources	\$ 25,200	\$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
Zimeno Inc. dba Monarch Tractor	\$0	\$100,000

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	\$ 1,999,992

TOTAL Amount: \$ 1,999,992

R&D Program Area: ESB: Renewables

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: 101

M. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Angela Richards

Address: 151 Lawrence Dr

City, State, Zip: Livermore, CA 94551-5126

Phone: 1-833-247-4797, ext.

E-Mail: arichards@monarchtractor.com

3. Recipient's Project Manager

Name: Toni Radtkey

Address: 151 Lawrence Dr

City, State, Zip: Livermore, CA 94551-5126

Phone: 510-418-9843

E-Mail: tradtkey@monarchtractor.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-23-302
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: Sean Dory

Approval Date: 7/29/2024

Branch Manager: Kevin Uy

Approval Date: 7/30/2024

Director: Delegated to Branch Manager

Approval Date: 7/30/2024

Exhibit A
Scope of Work
Zimeno, Inc. dba Monarch Tractor

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR¹	Task Name
1		General Project Tasks
2		Hardware, Firmware, and Software Updates for Residential Applications
3	X	Validation Testing and Regulatory Certification
4		MELD Integration With CEC/Utility Servers
5	X	Development, Testing, Deployment, And Data Collection of MELD in Various Scenarios
6		Deployment Data Analysis and Automatic Report Generation
7		Community Outreach
8		Evaluation of Project Benefits
9		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BTM	Behind The Meter
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
COTS	Commercial Off the Shelf
CPR	Critical Project Review
EVPE	Electric Vehicle Power Export Equipment
EVSE	Electric Vehicle Support Equipment
IOU	Investor-Owned Utility
MELD	Monarch Electrical Load Distribution
MIDAS	Market Informed Demand Automation Server
NRTL	National Recognized Testing Lab
PSPS	Public Safety Power Shutoff
TAC	Technical Advisory Committee
TRL	Technology Readiness Level

¹ 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.

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Scope of Work
Zimeno, Inc. dba Monarch Tractor

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the development, certification, deployment, demonstration, and data analysis of the Monarch Electrical Load Distribution (MELD) system. The proposed work will demonstrate MELDs value, versatility, and viability at installations across several sites with a combination of electric tractors (such as those produced by the recipient), electric pickup trucks, stand-alone battery backup systems, and grid-tied battery backup systems.

B. Problem/ Solution Statement

Problem

Current technologies are complicated and expensive for interconnecting available energy storage, such as electric vehicle batteries, to homes during blackouts. This limits access to energy resiliency to the affluent. Current systems target larger homes, frequently require multiple days for an electrician to install, and fail to provide comprehensive backup capabilities. Consumers need simpler, lower cost, scalable, easier to install, intelligent, whole-home electrical distribution systems.

Solution

The Monarch Electrical Load Distribution (MELD) system combines the functionality of a whole-home intelligent breaker panel, Electric Vehicle Supply Equipment (EVSE), dark start battery, surge suppressor, automated transfer switch, and behind the meter peak shaving system into one integrated product. MELD's modular design enables installations ranging from small homes with 60A services to small two-to-four-unit apartment complexes with 200A services. MELD's integrated design simplifies installation, thus reducing required electrician time and cost. Because of its intelligent and whole-home configuration, MELD does not limit which loads users back up during blackouts. MELD's wholistic design enables a shift from current bespoke, hardwired, in-field work performed by an electrician to standardized, software configurable, in-factory automated assembly. This improves quality, end-user flexibility/value, and reduces costs, thus enabling access to grid backup capabilities to all residential electricity consumers.

MELD works with electric pickup trucks, electric tractors (such as Monarch's MK-V), stand-alone battery backup systems, and hybrid/grid-tie battery backup systems. This flexibility increases options for customers, thus reducing total system cost and capitalizing on any existing energy-storage related investment. MELD's unique architecture enables utilization of non-grid-tie capable inverters for both automated backup and behind-the-meter peak shaving. This functionality unlocks customer value

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Zimeno, Inc. dba Monarch Tractor

from current and legacy inverter systems on day one of usage without requiring a utility interconnect agreement.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Advance the MELD technology from Technology Readiness Level (TRL) 6 at the start of the agreement to TRL 8 by the end of the agreement by achieving regulatory certification of MELD to enable installation and sale in California.
- Demonstrate MELD providing ratepayer benefits when coupled with:
 - An electric pickup truck with exportable power capabilities
 - An electric tractor with bidirectional power functionality (e.g., Monarch Tractor's MK-V model)
 - A stand-alone battery backup inverter
 - A grid-tied battery backup inverter
- Demonstrate MELDs ability to provide backup power during real and simulated blackout and/or Public Safety Power Shutoff (PSPS) events.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety by (respectively) enabling backup power supply during blackouts, performing behind-the-meter peak shaving and demand shifting, and reducing the number of electrical connections (and therefore potential failure points) compared to currently available products.

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 demonstrating new ways to integrate existing stationary and vehicle-mounted battery inverters into backup power systems. MELD combines unique hardware, intelligent firmware, and connected software to advance beyond the limits of existing intelligent electrical panel and backup power system technologies. Successful execution of this agreement will demonstrate (and achieve regulatory certification of) the co-management of grid-tied and stand-alone supported loads within one breaker panel.

Agreement Objectives

² 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).

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.

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The objectives of this Agreement are to:

- Demonstrate MELDs ability to connect to 60A, 100A, 150A, and 200A services without triggering a utility service upgrade.
- Collect and analyze one year of data from each of ten MELD installations across five deployment sites and three Investor-Owned Utilities (IOU)s.
- Demonstrate reduced utility bills via behind-the-meter (BTM) peak shaving and demand shifting at one or more of the deployment sites.
- Demonstrate at least one islanding, backup, and grid reconnection sequence for each of the ten installations, with at least one demonstration occurring during peak hours from 4:00-9:00PM.
- Demonstrate that the installation time, effort, and cost for MELD is lower than for existing similar backup systems.
- Obtain UL certification for the MELD system in line with the National Electric Code

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.

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- 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).

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- 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:

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- 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:

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- 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.

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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.

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- 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

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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:

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- 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:

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- 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:

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- 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).

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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 insure 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;

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- 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.

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- 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 insure 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.

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- 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

IV. TECHNICAL TASKS

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.

Subtask 1.1 (Products) describes the procedure for submitting products to the CAM.

TASK 2 – HARDWARE, FIRMWARE, AND SOFTWARE UPDATES FOR RESIDENTIAL APPLICATIONS

The goals of this task are to update the hardware, firmware, and software of recipient’s existing three-phase 480/277VAC agricultural-focused system to a split phase 240/120VAC residential-focused system. During execution of this task the mechanical packaging, electrical circuit design, control firmware, and user facing smartphone applications will all be updated to align with this residential system focus.

The Recipient shall:

- Update Computer Aided Design packaging to align with common residential installation constraints.
- Revise Printed Circuit Board schematics and layouts in order to reduce cost via optimization of the design around residential voltage and power levels.
- Define firmware architectures to handle the various backup power sources identified in this scope of work.
- Refine mobile app user experiences around residential (rather than agricultural) loads and priorities.
- Create an updated *Residential-Focused Data Sheet* that:
 - Captures key dimensions and mounting requirements;
 - Provides system level electrical performance specifications;
 - Demonstrates different backup energy integration options; and
 - Describes key features and functions in a user-friendly fashion.
- Author an *Installation and Commissioning Quick Start Guide* that:
 - Provides key safety warnings and guidance;
 - Outlines the steps required to mechanically install MELD;
 - Captures the operations and connections needed to integrate MELD into a home’s electrical distribution system; and

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- Describes how to commission an installed system via the user smartphone app.

Products:

- Residential-Focused Data Sheet
- Installation and Commissioning Quick Start Guide

TASK 3 – VALIDATION TESTING AND REGULATORY CERTIFICATION

The goals of this task are to validate the MELD system against both recipient's internal and relevant regulatory requirements. Testing will be performed on production representative hardware and firmware.

The Recipient shall:

- Build production representative test samples to support internal and regulatory testing activities.
- Perform validation and verification testing to internal recipient specifications and requirements.
- Create a *Regulatory Certification Test Report* which summarizes and compiles test reports from National Recognized Testing Laboratories (NRTLs) and includes the following:
 - A recipient created summary of regulatory test results;
 - An NRTL test report against UL67 – Panelboards;
 - An NRTL test report against UL916 – Energy Management Equipment;
 - An NRTL test report against UL869A – Service Equipment;
 - An NRTL test report against UL9741 – Electric Vehicle Power Export Equipment (EVPE);
 - An NRTL test report against UL2594 – Electric Vehicle Supply Equipment (EVSE);
 - An NRTL test report against UL2231 – Personnel Protection Systems for Electric Vehicle Supply Circuits;
 - An NRTL test report against FCC Part 15 Class B;
 - A test report showing compliance with IEEE2030.5 (where applicable);
 - A test report showing compliance with ISO15118-20 (where applicable); and
 - A test report showing compliance with IEEE1547 (where applicable).
- Obtain *Proof of UL Certification* in line with the National Electric Code (NEC) for the MELD system based on the tests above.
- Prepare *CPR Report #1* and participate in CPR Meeting #1.

Products:

- Regulatory Certification Test Report
- Proof of UL Certification
- CPR Report #1

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TASK 4 – MELD INTEGRATION WITH CEC/UTILITY SERVERS

The goals of this task are to demonstrate communication between the CEC/Utility cloud infrastructure and recipient's WingspanAI cloud infrastructure and utilization of that information exchange to reduce end user energy bills. The recipient, working with partner Gridtractor, will demonstrate integration of utility data related to time of use rates, demand charges, demand response events, and PSPS events with MELD system management. Reduction in end-user energy bills via usage of utility provided data integrated with the MELD mobile app will also be demonstrated.

The Recipient shall:

- Expand the previously developed Utility to recipient/Grid Tractor cloud interface to:
 - Provide residential time of use rate information from Utility to recipient;
 - Acquire Demand Response event notifications from Utility to recipient;
 - Investigate feasibility of communicating dynamic real-time and anticipated energy storage availability from recipient to Utility to account for actual and planned electric vehicle plug in and removal from MELD installations;
 - Refine previously developed connections to the CEC's Market Informed Demand Automation Server (MIDAS);
 - Determine the correct balance between user-directed behind the meter control and utility-controlled energy dispatch;
 - Progress towards standards compliance for communication interfaces by investigating various combinations of options from the following:
 - DIN 15118-20
 - OCPP 2.0.1
 - IEEE 2030.5
 - SunSpec Modbus
 - Track interconnect agreement status and net metering rate structure information to determine if grid back feed is allowable and financially beneficial for a given MELD installation; and
 - Create a dashboard capturing rates, conditions, and status across geographically diverse MELD installations residing in different IOU Utility service areas.
- Use an *End-User Mobile App Utilization of Utility Data Video Outline, Fact Sheet, and Link* to create a video that demonstrates:
 - Education of end users as to time-of-use rates via the mobile app;
 - Warning end users of upcoming planned PSPS events;
 - Minimization of daily energy costs via BTM demand shifting based on time of use rate information;
 - Display of costs that would have been incurred without intelligent scheduling of energy demands based on time of use rate information; and
 - Show the status and ability of the system to back feed power to the grid and receive net metering driven revenue.

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Products:

- End-User Mobile App Utilization of Utility Data Video Outline, Fact Sheet, and Link

TASK 5 – DEVELOPMENT, TESTING, DEPLOYMENT, AND DATA COLLECTION OF MELD IN VARIOUS SCENARIOS

The goals of this task are to build, deploy, test, and analyze the functionality of MELD coupled to electric tractors, electric pickup trucks, stand-alone battery backup inverters, and grid-tied battery backup inverters. Simulation, test data, analysis, and surveys of both installers and end users will be used to prove out consumer desirability, technical feasibility, and commercial viability of this system configuration.

The Recipient shall:

- For each of the four use cases (electric tractor, electric pickup truck, stand-alone battery backup inverter, grid-tied battery backup inverter):
 - Develop a concept of operations for MELD operating with the specific external energy storage system;
 - Create a simulation of MELD and the specific external energy storage system;
 - Simulation may be either spreadsheet based or Matlab/Simulink based.
 - Customize the end-user mobile app to support the specific external energy storage system use case;
 - Choose at least one installation site for real-world testing of MELD + the specific external energy storage system;
 - Select an electrician in collaboration with the site owner for MELD installation;
 - Interview both the site owner and electrician and have them complete questionnaires prior to installation;
 - Prepare and install MELD and the specific external energy storage system at the selected installation site(s);
 - Conduct a post-installation interview and survey with the installing electrician;
 - Gather three months of data for operation of MELD + the specific external energy storage system at the site(s);
 - Interview and acquire feedback from the end user after three months of operation;
 - Use a *MELD + (specific external energy storage system) Use Case Video Outline, Fact Sheet, and Link* to create a video that includes the following:
 - A description of the MELD + specific external energy storage system use case and operating modes;
 - A walk-through of how end users can use MELD with the specific external energy storage system;
 - A timelapse or montage of the MELD + specific external energy storage system installation sequence;

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- Snippets from the electrician post-installation interview;
 - A summary of integrated system performance after three months of usage; and
 - Snippets from the end user interview.
- Gather an additional three months of operational data for a total of six months.
- Compose a draft *MELD Test Report* that includes the following for each of the four external energy storage system options:
 - Estimated and actual site preparation and installation time and cost;
 - Installing electrician before and after survey responses;
 - Analysis of six months of data on system usage (for draft submission);
 - Detailed data across at least one real or simulated planned power shutoff; and
 - Detailed data across at least one real or simulated unplanned blackout.
- Submit the draft *MELD Test Report* to the CAM for review and feedback.
- Gather additional months of operational data.
- Update and resubmit a final *MELD Test Report* to the CAM that:
 - Addresses any feedback from the draft submission; and
 - Expands the data set analyzed from the original six months.
- Prepare *CPR Report #2* and participate in CPR Meeting #2.

Products:

- MELD + Electric Tractor Use Case Video Outline, Fact Sheet, and Link
- MELD + Electric Pickup Truck Use Case Video Outline, Fact Sheet, and Link
- MELD + Stand-Alone Battery Backup Inverter Use Case Video Outline, Fact Sheet, and Link
- MELD + Grid-Tie Battery Backup Inverter Use Case Video Outline, Fact Sheet, and Link
- MELD Test Report (draft and final)
- CPR Report #2

TASK 6 – DEPLOYMENT DATA ANALYSIS AND AUTOMATIC REPORT GENERATION

The goals of this task are to create web-accessible power/energy dash boards, develop automatic report generation software, and utilize this information to analyze the performance of the MELD deployments. This task includes both user-facing dashboards and reports focused on a single MELD unit and fleet wide summaries that would be accessible to the recipient and (eventually) grid stakeholders.

The Recipient shall:

- Develop a user-facing, mobile-app-based, dashboard to show historical energy/power data and trends based on the utilization of a single MELD unit.

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- Enable end users to download an automatically generated report of historical energy usage and power levels in a .pdf format.
- Create a fleet-wide dashboard/interface that allows the recipient to monitor all deployment sites from a single web-based landing page.
- Monitor and submit samples of a draft *Automatically-Generated Fleet-Wide MELD Status Report* that includes:
 - MELD up-time, fault, warning, version, and status information;
 - Peak power levels and timing per MELD installation;
 - Total energy throughput per MELD installation (broken down by month);
 - A listing of observed power cutoff events, including start and stop time of each event, energy provided during each event, and total backup time achieved;
 - Reporting of count and duration of times when each MELD unit limited total panel power to avoid overload of the incoming utility feed; and
 - Data visualizations to assist in data analysis and understanding.
- Analyze the automatically generated reports in collaboration with CEC personnel.
- Refine the automatically generated reports based on internal and CEC feedback to create a final version.

Products:

- Automatically-Generated Fleet-Wide MELD Status Report (draft and final)

TASK 7 – COMMUNITY OUTREACH

The goal of this task is to ensure that community stakeholders are engaged in the technology deployment and demonstration.

The Recipient shall:

- Develop a draft *Community Engagement Plan* with project partner UC ANR that outlines planned outreach and community engagement activities.
- With project partner UC ANR plan and host outreach ‘field days’ to demonstrate the technology to members of the community as outlined in the *Community Engagement Plan*. Update the *Community Engagement Plan* based on feedback from the CAM.
- Develop a draft *Community Engagement Report* with project partner UC ANR that summarizes the activities completed as part of outreach events and tracks metrics including:
 - Number of attendees;
 - Socioeconomic groups represented;
 - Industries represented;
- Update the *Community Engagement Report* based on feedback from the CAM.

Products:

- Community Engagement Plan (draft and final)

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- Community Engagement Report (draft and final)

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TASK 8: 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](http://www.energizeinnovation.fund) (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](http://www.energizeinnovation.fund) (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

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TASK 9 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 *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

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- Project Case Study (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.