California Energy Commission
July 10, 2024 Business Meeting
Backup Materials for Sonocharge Energy, 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: 24-0710-13d

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Sonocharge Energy, 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-24-004 with Sonocharge Energy, Inc. for a $3,000,000 grant. This agreement will develop an LRIP line for integrating surface acoustic wave technology into lithium-ion battery packs to enhance energy density and charging capabilities, to take place in San Diego; 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 July 10, 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-24-004

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Marc Arenas
3. MS-:51
4. Phone Number: 916-956-2030

C. Recipient's Information

1. Recipient's Legal Name: Sonocharge Energy, Inc.
2. Federal ID Number: 87-4585119

D. Title of Project

Title of project: Pilot Production of High-Performance Lithium-ion Battery Packs

E. Term and Amount

1. Start Date: 8/1/2024
2. End Date: 3/31/2029
3. Amount: $3,000,000.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 7/10/2024
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Benson Gilbert
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

Agenda Item Subject and Description:

Sonocharge Energy, Inc.

Proposed resolution approving agreement EPC-24-004 with Sonocharge Energy, Inc. for a $3,000,000 grant, and adopting staff's determination that this action is exempt from CEQA. This agreement will develop an LRIP line for integrating surface acoustic wave technology into lithium-ion battery packs to enhance energy density and charging capabilities, to take place in San Diego, CA. (EPIC funding) Contact: Benson Gilbert (Staff Presentation: 5 minutes)

G. California Environmental Quality Act (CEQA) Compliance

1. **Is Agreement considered a "Project" under CEQA?**
   Yes

   If yes, skip to question 2.

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

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

2. If Agreement is considered a "Project" under CEQA answer the following questions.

a) Agreement **IS** exempt?

Yes

Statutory Exemption?
No

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

PRC section number: None

CCR section number: None

Categorical Exemption?
Yes

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

CCR section number: Cal. Code Regs., tit. 14, § 15301 ; 15306

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.
California Code of Regulations, title 14, section 15301, provides that projects which consist of the operation, repair, maintenance, permitting, 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, are categorically exempt from the provisions of the California Environmental Quality Act (CEQA). This project involves the design, assembly, and commissioning of a low-rate initial production manufacturing line to manufacture battery pack components and complete battery packs for use in electric powered transportation vehicles. This project involves design, manufacturing, and testing activities at an existing, developed site on land that is not environmentally sensitive. The project will involve no expansion of existing use at the facility. No historical resources or buildings will be affected. Noise and odors will not be generated by these activities in excess of existing permitted amounts. The design, manufacturing, and testing activities will not increase traffic to the site and will not require permits for air, water, conditional use, building expansion, hazardous waste, or rezoning. Therefore, the project is exempt from CEQA under section 15301.

California Code of Regulations, title 14, section 15306, provides that projects which consists of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from the provisions of CEQA. This project involves basic data collection, research, experimental management, and resource evaluation activities which do not result in serious or major disturbance to an environmental source. This project involves designing, testing, and commissioning of a low-rate initial production manufacturing line to manufacture battery pack

components and complete battery packs for use in electric powered transportation vehicles. Manufacturing processes will be designed, evaluated, and optimized. This work will not result in a serious or major disturbance to an environmental resources. Therefore, the project is exempt from CEQA under section 15306.

This project 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.

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
No subcontractors to report	$	**$**

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
No vendors to report	**$**	**$**

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	22-23	301.001J	$ 3,000,000

TOTAL Amount: $ 3,000,000

R&D Program Area: TIEB: EDMF

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: An Huang

Address: 6335 Ferris Sq Ste A

City, State, Zip: San Diego, CA 92121-3249

Phone: 858-531-5193

E-Mail: an@sonochargeenergy.com

3. Recipient's Project Manager

Name: An Huang

Address: 6335 Ferris Sq Ste A

City, State, Zip: San Diego, CA 92121-3249

Phone: 858-531-5193

E-Mail: an@sonochargeenergy.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-21-304R2
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	Yes

Approved By

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

Agreement Manager: Marc Arenas

Approval Date: 5/29/2024

Branch Manager: Anthony Ng

Approval Date: 5/30/2024

Director: Anthony Ng for Cammy Peterson

Approval Date: 5/30/2024

EXHIBIT A
Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2		Develop SAW Plate Line
3	X	Develop Battery Pack Line
4		System Validation via EV Field Testing
5		Evaluation of Project Benefits
6		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CPR	Critical Project Review
TAC	Technical Advisory Committee
SAW	Surface Acoustic Wave
SOC	State of Charge
Li-ion	Lithium ion
Li	Lithium
MWh	Megawatt Hours
kWh	Kilowatt hours
EV	Electric vehicle
OEM	Original equipment manufacturer
TRL	Technology Readiness Level
MRL	Manufacturing Readiness Level
LRIP	Low-rate initial production

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 and establishment of a pilot production line aimed at integrating an innovative acoustic technology that uses acoustic platform technology into electric vehicle batteries. This elevated technology ensuring power density, energy density, cycle life, and safety attributes in contrast to conventional Lithium-ion (Li-ion) packs, thus enhancing performance to bolster E-mobility objectives.

[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.

EXHIBIT A
Scope of Work

B. Problem/ Solution Statement

Problem

Li-ion batteries currently grapple with a complex challenge: striking a balance between fast charging capabilities, high energy density, extended cycle life, and safety. This intricacy is rooted in the sluggish diffusion rate of lithium ion within battery cells, leading to a trade-off scenario were enhancing one aspect often comes at the expense of the remaining three. Consequently, existing batteries might excel in one specific area but suffer setbacks in the others, presenting a substantial hurdle for overall battery performance. The EV batteries today charge 65 mins (more than 1C) to reach 100% SOC or retained only 30% of the cycle life if charges at 15 mins (3C) to 100%. The Recipients technology address the issues, providing an acoustic platform technology to boost the battery performances to reduce the charging time to 15 mins (3C) while maintaining the long cycle life.

Solution

The Surface Acoustic Wave (SAW) technology boost the battery performances by enhancing the Li ion diffusion rate and homogenize the Li concentration gradients, which are the major drivers to the battery degradation at fast charging conditions. The Recipient plans to adopt a scalable method via SAW pick and place machines and reflow oven methods to manufacture SAW plates at scale and lower cost. The technology accelerates the diffusion rate of lithium ions within Li-ion batteries, thereby achieving simultaneous optimization of all four crucial factors: an impressive 50% increase in power density, a notable 100% rise in energy density under fast charging conditions, a doubled cycle life, and a significant enhancement in safety measures within our battery module. This is particularly evident when compared directly to equivalent baseline batteries procured from a tier 1 supplier but lacking our technological integration. Through the successful integration of our technology at the system level, we provide substantial benefits to the E-mobility sector, and eventually extend our efforts to diverse market segments, including energy storage, electric aviation, and beyond. By enhancing adoption rates for E-mobility and contributing to reductions in greenhouse gas emissions, our technology stands poised to make a meaningful impact on the state's energy goals and sustainability targets.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Reduce cost of EV batteries by ~40%
- Reduce key barriers to EV adoption: EV price, range anxiety and charging time.
- Increase rate of EV adoption by reducing barriers to adoption.
- Achieve TRL / MRL 8 for the SAW technology.
- Design and establish a battery module to pack pilot production line with a capacity for producing 500MWh modules annually, integrating SAW technology.
- Validate the manufacturability of our proprietary technology at the system level through module configurations of 10kWh each and packs with a capacity of 100kWh.
- Verify the manufacturing quality of the novel modules and packs, showcasing capabilities for a rapid 15-minute recharge time while maintaining a 0-100% State of Charge (SOC) range with a 100% enhancement, and enduring an impressive 3000 cycles of battery life with a 300% improvement in longevity over today's leading brand.
- Conduct a practical proof-of-manufacturing demonstration for the novel modules and packs, exemplifying their ability to achieve a 15-minute recharge, cover the entire 0-100% SOC charge range, and empower an electric vehicle with a 400-mile driving range.

Ratepayer Benefits:[2] This Agreement will result in the California ratepayer benefits of *lower* costs by 50% (benefits such as 2X cycle life) *and* increased safety by for the adoption of the Recipient into battery pack systems. One of the key benefits of this technology lies in the substantial improvement of at least 100% in charging speed and travel range, effectively alleviating the factors contributing to range anxiety and fostering wider EV adoption. Additionally, this technology ensures a significant 50% enhancement in safety by eliminating the formation of hazardous Li dendrites that can arise during fast charging conditions. Furthermore, cost reductions of 30-40% can be achieved, as this technology diminishes the quantity of batteries needed for incorporation into a battery module. When commercialized and widely adopted, the Recipient is projected to deliver significant California ratepayer benefits by 2050 including over 4 GT of CO2e reductions and $34B in cost savings to users and savings of $34B to the state.

Technological Advancement and Breakthroughs: 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 at least 20% due to improving the performance of lithium-ion batteries in numerous applications. For examples, reducing the battery pack oversizing by 20%, generating 1.5X lifetime to 1000 cycles at 3C (15 mins) recharging rates mainly for increasing electric vehicles and commercial vehicles adoption. On the other hand, we are expecting to address the 30-50% oversizing for the typical energy storage systems originates from the concerns around the cycle life. The project will develop our internal development/production line (while maintaining quality control and reducing production costs), achieve TRL / MRL 7 and to prepare for commercialization (mass production) after this project is completed.

Agreement Objectives

The objectives of this Agreement are to:

- Design and establish a SAW production line and a battery module-to-pack pilot production line, that meets the state and federal fire laws, ordinances, regulations, and standards.
- Achieve a unit production speed of 150 kWh/day.
- Demonstrate the reduced charging time by 2X, or increasing the lifetime by 2X, enhancing safety (no dendrites) compared to the baseline cells works with these manufactured units.
- Validate the manufacturability of our proprietary technology at the system level.
- Verify the manufacturing quality of the novel modules and packs.
- Conduct a practical proof-of-manufacturing demonstration.
- Conduct system validation via EV field testing.
- Optimize the production line for quality, cost and production speed; and,
- Evaluate project benefits and share knowledge gained with the industry.

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

[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).

EXHIBIT A
Scope of Work

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

The Recipient shall:

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

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

For products that require a final version only

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

For all products

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

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, the Commission Agreement Officer (CAO), and any other CEC staff relevant to the Agreement. The Recipient will bring its Project Manager and any other individuals designated by the CAM to 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., WebEx), with approval of the CAM.
  The administrative portion of the meeting will include discussion of the following:
  - Terms and conditions of the Agreement.
  - Invoicing and auditing procedures.
  - Administrative products (subtask 1.1).
  - CPR meetings (subtask 1.3).
  - Match fund documentation (subtask 1.7).
  - Permit documentation (subtask 1.8).
  - Subcontracts (subtask 1.9); and
  - Any other relevant topics.

  The technical portion of the meeting will include discussion of the following:
  - The CAM's expectations for accomplishing tasks described in the Scope of Work.
  - An updated Project Schedule.
  - Technical products (subtask 1.1).
  - Progress reports (subtask 1.5).
  - Final Report (subtask 1.6).
  - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); 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 will 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 will 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. If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Deputy Director of the Energy Research and Development Division.
- 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 and the CAO 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* on a USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 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 monthly *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 preceding month, 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. See the Progress Report Format Attachment for the recommended specifications.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the "Payment of Funds" section of the terms and conditions, including a financial report on Match Funds and in-state expenditures.

Products:

- Progress Reports
- Invoices

Subtask 1.6 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 1.6.1 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 Product:

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

Subtask 1.6.2 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 SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal 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 proposal 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 1.8 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 1.9 Subcontracts

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

The Recipient shall:

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

Products:

- Subcontracts *(draft if required by the CAM)*

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 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 1.11.
- 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 1.11 TAC Meetings
The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held via teleconference.

The Recipient shall:

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

The TAC shall:

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

Products:

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

Subtask 1.12 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 from the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.

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

Products:

- TAC Performance Metrics Summary
- Project Performance Metrics Results

EXHIBIT A
Scope of Work

IV. TECHNICAL TASKS

TASK 2: DEVELOP SAW PLATE LINE

The goals of this task are to design, set up, and commence a SAW plate production line that seamlessly integrates with A battery pack line, ensuring synchronized production, efficiency, and quality.

Subtask 2.1 Design and Planning

The goal of this task is to design an efficient and effective layout for the SAW plate production line and to identify potential challenges in the integration process.

The Recipient shall:

- Conduct a feasibility study to understand the nuances of the SAW plate line integration, resulting in a detailed SAW plate feasibility report that captures the viability and associated risks.
- Design a blueprint for the SAW plate production line to ensure optimized workflows,
- Spot potential bottlenecks and challenges in the integration process and encapsulate these findings in the integration challenge analysis.
- Secure pilot line facility (if not already completed by the time the project starts)
- Procure subcontractor for facility modification work.
- Complete necessary facility modifications (e.g. electrical, ventilation, structural, etc.)
- Create a *SAW Design, Planning and Evaluation Report*. This report will:
    - Describe the production line blueprint planning process and what factors were considered.
    - Summarize the potential bottlenecks and how they were addressed.
    - This report will be 5-10 pages, will include graphics and figures, and include an executive summary written for a non-technical audience.

Products:

- SAW Design, Planning and Evaluation Report

Subtask 2.2: Equipment Procurement and Installation

The goal of this task is to procure and set up the necessary equipment for the SAW plate production line.

The Recipient shall:

- Determine the necessary machinery and tools for the SAW plate production line.
- Forge relationships with suppliers and vendors while maintaining a regularly updated equipment procurement log.
- Manage the equipment installation process, ensuring seamless integration with the battery pack line, all while documenting progress in the installation progress report.
- Prepare an *Equipment List and Specification Report* providing information that includes but is not limited to integration, suppliers, and a summary of lessons learned from equipment installation.

Products:

- Equipment List and Specification Report

Subtask 2.3: SAW Plate Production Protocols

The goal of this task is to standardize the production processes for high-quality SAW plates, ensuring they're primed for integration with battery packs.

The Recipient shall:

- Chalk out a SAW plate production protocol detailing every production step from raw material procurement to the delivery of the finished product.
- Design stringent *Quality Control Guidelines* specific to SAW plates, ensuring they meet the set integration standards for battery packs.
- Educate the workforce about the new production methods, with the entire process summarized in the SAW plate production training report.

Products:

- Quality Control Guidelines

Subtask 2.4: Trial Production of SAW Plates to Achieve 5 MWh Capacity
The goal of this task is to conduct a trial production of the SAW plate line, ensuring the efficiency of the production process and its potential for integration with the existing battery pack line.

The Recipient shall:

- Initiate the SAW plate line setup and process, documented in the preliminary saw plate setup report.
- Oversee a series of production trials targeting a 5 MWh SAW plate output, detailing procedures, conditions, and equipment used.
- Analyze data from these trial runs in terms of efficiency, quality, and potential issues, with insights consolidated in the *SAW Plate Trial Production Analysis Summary*.
- Evaluate the integration capabilities of the SAW plates produced with the conventional battery packs, summarized in the saw plate integration potential report.

Products:

- SAW Plate Trial Production Analysis Summary

Subtask 2.5: Integration with the 0.5 GWh Battery Pack Line
The goal of this task is to merge the SAW plate production seamlessly with the 0.5 GWh battery pack line, focusing on maximum output and efficiency.

The Recipient shall:

- Steer the initial integration process, recording the insights in the *Pilot Integration Report*.
- Utilize feedback from the pilot phase to craft a refined integration implementation plan.
- Consistently monitor data during the SAW plate integration, maintaining an integration monitoring log.

Products:

- Pilot Integration Report

Subtask 2.6: Production Scalability and Future Integration
The goal of this task is to gauge the scalability potential of the integrated production and devise a roadmap for future integration enhancements.

The Recipient shall:

- Perform a detailed scalability assessment of the integrated production, culminating in the *Scalability Assessment Report*.
- Envision and plan for upcoming technological enhancements that could elevate the integration process, all detailed in the future integration roadmap.

Products:
- Scalability Assessment Report

TASK 3: DEVELOP BATTERY PACK LINE
The goal of this task is to establish, optimize, and scale up the battery pack manufacturing line to attain an annual production capacity of 0.5 GWh while ensuring product quality, efficiency, and safety standards.

Subtask 3.1: Assessment and Planning
The goal of this subtask is to conduct a comprehensive evaluation of the current manufacturing infrastructure and processes and plan enhancements to achieve the desired production capacity.

The Recipient shall:
- Conduct an in-depth analysis of existing manufacturing processes, creating a manufacturing assessment report outlining current metrics, throughput, and yield.
- Engage stakeholders to gather insights and feedback, integrating this into a *Manufacturing Line Plan*.
- Design the *Manufacturing Line Plan* to detail technology enhancements, infrastructure modifications, workforce enhancements, and the inclusion of safety checks.
- Prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR #1 meeting.

Products:
- Manufacturing Line Plan
- CPR Report #1

Subtask 3.2: Infrastructure and Equipment
The goal of this subtask is to revamp the manufacturing facility and procure necessary equipment for enhanced production.

The Recipient shall:
- Identify suitable equipment vendors, negotiating deals, and documenting these in the equipment procurement record.
- Reconstruct the facility layout for optimal productivity and efficiency, capturing the redesign in the *Updated Facility Layout Design*.
- Incorporate automation and digital tools, summarized in the *Digital and Automation Integration Report.*

Products:
- Updated Facility Layout Design
- Digital and Automation Integration Report

Subtask 3.3: Workforce Training and Development

The goal of this subtask is to bridge workforce skills gaps and prepare them for the updated manufacturing line.

The Recipient shall:

- Undertake a skill gap analysis to understand current workforce competencies.
- Design and execute a *Custom Training Program Blueprint* addressing new equipment and processes.
- Collaborate with external experts and document specialized training sessions in the *External Training Session Report*.
- Initiate a mentorship program and prepare a *Mentorship Program Outline*.

Products:

- Custom Training Program Blueprint
- External Training Session Report
- Mentorship Program Outline

Subtask 3.4: Safety and Quality Protocols
The goal of this subtask is to integrate robust safety measures and ensure the highest standards of product quality in the manufacturing line.

The Recipient shall:

- Develop a *Safety Integration Plan* which outlines all the safety measures to be adopted.
- Design a *Quality Control Protocol*, highlighting stringent testing and validation methodologies for battery packs.
- Train workforce on the new safety protocols, compiling feedback and observations based on the safety training feedback.
- Perform periodic safety drills and maintain a safety drill record.

Products:

- Safety Integration Plan
- Quality Control Protocol

Subtask 3.5: Trial Production to Achieve 5 MWh Production Capacity
The goal of this subtask is to conduct a trial production run aiming at a 5 MWh output to validate the processes and ensure product quality.

The Recipient shall:

- Prepare a trial production schedule outlining the timeline and milestones.
- Analyze the results of the trial production run, compiling findings in the *Trial Production Analysis Report*.
- Document anomalies, if any, and the corrective measures taken in the anomaly and correction record.
- Seek external validation of product quality, summarized in the external quality verification report.

Products:

- Trial Production Analysis Report

Subtask 3.6 Process Optimization Post-Trial

The goal of this subtask is to refine and optimize the production process based on insights from the trial run.

The Recipient shall:

- Host feedback sessions, documenting observations in the post-trial feedback compilation.
- Initiate process improvement strategies, elaborated in the *Process Optimization Plan*.
- Implement changes and validate for efficiency, resulting in the process validation report.

Products:

- Process Optimization Plan

Subtask 3.7 Commencement of Production to Achieve 500 MWh Production Capacity
The goal of this subtask is to upscale production, aiming to hit the target of 500 MWh annually.

The Recipient shall:

- Develop a *Production Scale-up Strategy*, detailing the gradual ramping up of production rates in alignment and coordination with Subtask 4.5 – Line Optimization and Increase Production Speed.
- Monitor production in real-time, keeping track in the production monitoring log.
- Regularly update stakeholders on progress through monthly production briefs.
- Assemble a dedicated team for troubleshooting and maintain a troubleshooting and resolutions diary for any production anomalies.

Products:

- Production Scale-up Strategy

TASK 4 SYSTEM VALIDATION VIA EV FIELD TESTING
The goal of this task is to ensure the efficiency, reliability, and performance of the innovative battery pack solution when integrated into electric vehicles (EVs), by undergoing rigorous internal and external validation processes.

Subtask 4.1 In-House Battery Pack Validation
The goal of this subtask is to internally validate the performance of the battery pack to ensure it meets predefined specifications and is suitable for integration into EVs.

The Recipient shall:

- Perform a series of tests on the battery pack, evaluating parameters like energy density, cycle life, charge-discharge efficiency, safety, and temperature stability, documented in the *Battery Pack Performance Report*.
- Ensure that the battery pack aligns with all predefined specifications for integration into EVs, detailed in the battery pack specification alignment report.

Products:

- Battery Pack Performance Report

Subtask 4.2: In-House EV Demonstration
The goal of this subtask is to exhibit the functionality and efficiency of the integrated battery pack within an EV under controlled in-house conditions.

The Recipient shall:

- Install the battery pack into a demonstration EV, ensuring seamless integration and compatibility, as documented in the EV integration report.
- Conduct a series of driving and performance tests in controlled environments, capturing insights in the *EV Demonstration Test Report*.
- Collect feedback from stakeholders present during the demonstration to identify potential improvements or issues, consolidated in the *EV Demonstration Feedback Report.*

Products:
- EV Demonstration Test Report
- EV Demonstration Feedback Report

Subtask 4.3: Customers Pack Validation
The goal of this subtask is to get the battery pack validated by potential or existing customers, ensuring that it meets market expectations and user requirements.

The Recipient shall:
- Engage with customers for a firsthand validation of the battery pack in their specific EV contexts.
- Provide necessary support, documentation, and guidelines to customers during their validation process.
- Gather and analyze feedback from customers regarding the performance and efficiency of the battery pack, summarized in the *Customer Validation Feedback Report*.

Products:
- Customer Validation Feedback Report

Subtask 4.4: Production Line Optimization and Increase of Production Speed
The goal of this subtask is to optimize the production line (including both the SAW plate line and the battery pack line) based on field testing performance feedback and production process monitoring and analyses to optimize product performance while increasing speed of production and maintaining quality control.

The Recipient shall:
- Analyze performance feedback from customer field testing and evaluate opportunities for design adjustments / optimizations.
- Analyze performance of the production line for product quality and error rate, optimize software and equipment for faster production times while maintaining quality metrics, generate *Production and Quality Control Reports*.
- Year 1: Achieve production volume of 25 units (6MWh capacity)
- Year 2: Achieve production volume of 150 units (250MWh capacity)
- Year 3: Achieve production volume of 300 units (500 MWh capacity)

Products:
- Production and Quality Control Reports

TASK 5: 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 6 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the learning that resulted from this project is captured and disseminated so that similar efforts build on the lessons learned.

The Recipient shall:

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, establishment, and operation of the project. 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 project's development.
    - 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 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 (draft and final)*
- 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 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.
- Have a booth at the ACT Conference in Long Beach to share learnings and impacts of this project and the Recipients technology with industry players including EV OEMs, and to develop off-take and/or licensing agreements that will support moving from LRIP to full-scale mass production and licensing operations.

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet (project schedule).