California Energy Commission
April 10, 2025 Business Meeting
Backup Materials for Unigrid, 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: 25-0410-03I

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Unigrid, 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-24-047 with Unigrid, Inc. for a $2,991,945 grant. This agreement will fund the design, build-out, and validation of a Low-Rate Initial Production line in San Diego to manufacture advanced Sodium-ion Batteries suitable for residential energy storage with a greater volumetric energy density than is commercially available due to their proprietary electrolyte and anode chemistry; 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 April 10, 2025.

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-24-047

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Kaitlin Choo
3. MS-:51
4. Phone Number: 916-232-8863

C. Recipient's Information

1. Recipient's Legal Name: Unigrid, Inc.
2. Federal ID Number: 88-2860846

D. Title of Project

Title of project: Advanced Sodium-ion Battery Production in California

E. Term and Amount

1. Start Date: 4/16/2025
2. End Date: 3/31/2030
3. Amount: $2,991,945.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 4/10/2025
3. Consent or Discussion? Consent
4. Business Meeting Presenter Name: Kaitlin Choo
5. Time Needed for Business Meeting: Enter number of minutes. Example: 5 minutes
6. The email subscription topic is: EPIC (Electric Program Investment Charge).

Agenda Item Subject and Description:

Unigrid, Inc.
Proposed resolution approving agreement EPC-24-047 with Unigrid, Inc. for a $2,991,945 grant, and adopting the staff's recommendation that this action is exempt from CEQA. This agreement will fund the design, build-out, and validation of a Low-Rate Initial Production (LRIP) line in San Diego to manufacture advanced Sodium-ion Batteries suitable for residential energy storage with a greater volumetric energy density than is commercially available due to their proprietary electrolyte and anode chemistry. (EPIC funding) Contact: Kaitlin Choo

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":

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

a) Agreement **IS** exempt?

Yes

Statutory Exemption?
No

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

PRC section number: None

CCR section number: None

Categorical Exemption?
Yes

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

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

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

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

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 have 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, build-out, and validation of a battery manufacturing line at an existing facility. The project involves the operation of the recipient's existing structures and mechanical equipment. The project will not involve any new construction or modification of existing facilities. Therefore, this project is exempt from the provisions of CEQA under section 15301.

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
BRO Design & Remolding Inc.	**$**64,941	**$**0
Thermal Hazard Technology, Inc	**$**0	**$**19,906
Xingheli Precision Mechanics	**$**0	**$**685,327
Vigor Technologies USA Inc.	**$**0	**$**172,452
Across International, LLC	**$**0	**$**44,390
Bio-Logic USA, LLC	**$**0	**$**26,538
Neware Technology LLC	**$**0	**$**70,000
Thailand Smelting and Refining Co., Ltd.	**$**0	**$**150,000
MTI Corporation	**$**0	**$**273,764
EMD Millipore Corporation	**$**0	**$**32,460

Tongrun	$0	$173,900
Zhuhai Smoothway Electronic Materials Co., Ltd.	$0	$45,000
Xiamen TOB New Energy Technology, Co. Ltd.	$0	$357,448

K. Key Partners

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

Key Partner Legal Company Name
No key partners to report

L. Budget Information

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

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	23-24	301.001K	$ 2,991,945

TOTAL Amount: $ 2,991,945

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: Darren Tan

Address: 10140 Mesa Rim Rd, 4

City, State, Zip: San Diego, CA 92121

Phone: 858-900-8216

E-Mail: darrentan@unigridbattery.com

3. Recipient's Project Manager

Name: Erik Wu

Address: 10140 Mesa Rim Rd, 4

City, State, Zip: San Diego, CA 92121

Phone: 530-518-3682

E-Mail: erik.wu@unigridbattery.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	No

Approved By

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

Agreement Manager: Kaitlin Choo

Approval Date: 2/26/2025

Branch Manager: Anthony Ng

Approval Date: 2/28/2025

Director: Jonah Steinbuck delegated to Branch Manager

Approval Date: 2/28/2025

Exhibit A
Scope of Work
UNIGRID Inc.

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2		Design and Develop a Sodium-Ion Battery Component Production System
3	x	Design and Build a Sodium-Ion Cylindrical Cell Production Line
4		Design and Build a Cell Binning and Evaluation System
5		Demonstration and Validation of Pilot Line Production
6		Evaluation of Project Benefits
7		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
LRIP	Low-Rate Initial Production
LIB	Lithium-ion Batteries
LFP	Lithium Iron Phosphate
NIB	Sodium-ion Batteries
PSD	Particle Size Distribution
SEM	Scanning Electron Microscope
TAC	Technical Advisory Committee
XRD	X-ray Diffraction

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the design, build-out, and validation of a Low-Rate Initial Production (LRIP) line to manufacture advanced Sodium-ion Batteries (NIB) featuring greater specific energy density than commercially available NIBs and anodes that do not solely contain hard carbon (“alternative anode”). The recipient’s sodium-ion battery is a viable candidate for residential energy storage applications due to the superior safety properties, excellent energy density, and lower cost compared to lithium-ion batteries due to the use of abundant sodium-based materials.

[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.

B. Problem/ Solution Statement

Problem

Electricity generated from clean, renewable energy sources is intermittent by nature and independent of demand. Therefore, ubiquitous and reliable energy storage is needed to overcome this intermittency issue in order to stabilize the grid and advance adoption of renewables for a cleaner grid. Current state-of-the-art lithium-ion batteries can be used for residential, commercial, and utility-scale energy storage systems, but they have four major challenges to their deployment:

1. They are too costly and inaccessible for widespread energy storage applications, especially in the residential sector.
2. They present safety hazards, such as battery failure or fire during a short circuit or when operated under harsh environments and extreme temperatures.
3. They rely on imported critical materials (lithium, cobalt, etc.) that face growing supply chain challenges and ethical concerns about extraction methods and labor practices.
4. They are hazardous to the environment due to the toxic materials used in their fabrication.

Further, NIBs are typically less energy dense than LIBs, which has limited development of this chemistry. Finally, the current market prices of conventional NIBs and LIBs are roughly equal, even though the component raw materials of NIBs are cheaper.

Solution

Advanced sodium-ion batteries offer a promising alternative to overcome these challenges and support widespread adoption of energy storage in multiple sectors. The recipient has a novel, proprietary NIB chemistry that contains all the environmental and safety benefits of NIBs, but with the energy density characteristics superior to those of currently commercially available LIBs (specifically, with Lithium Iron Phosphate (LFP) cathodes) used in some electric vehicles (EVs). When scaled up, the recipient's NIBs could also be cheaper ($75/kWh projected manufacturing cost) than current commercially available LIBs with LFP cathodes (>$100/kWh). Additionally, sodium-based materials can be sourced domestically, reducing the import reliance and supply chain challenges faced by conventional LIB materials, such as lithium and cobalt.

As a result, NIBs are ideal candidates for applications such as residential energy storage – our entry point in this fast-growing market – and ultimately, commercial and utility-scale energy storage.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Design, build, and validate production systems for the recipient's proprietary electrolyte and alternative anode materials.
- Design, build, and demonstrate a LRIP line for sodium-ion cylindrical battery cells that incorporate the alternative anode, electrolyte, and cathode.
- Design and build a cell binning and evaluation system to accurately determine production output and yields.

- Produce sodium-ion cylindrical battery cells with raw materials costing less and with a higher volumetric energy density than conventional NIBs and LIBs with LFP cathodes.

Ratepayer Benefits:[2]
This Agreement will result in the following ratepayer benefits:

- ***Lower costs of energy storage***
  Sodium-based materials are inexpensive and abundant in nature. It will directly affect the battery pack price paid by residential customers who generate their own power (for example, from solar panels) and reduce payback time on an energy storage device. A battery pack is the majority of the cost (>50%) of the final system.
- ***Increased safety***
  The product is safer, as all materials used in the development, design, and production of the sodium-ion battery are environmentally friendly and less prone to thermal runaway compared to current state-of-the-art lithium-ion batteries. This is an absolutely critical feature for residential applications.
- ***Greater electricity reliability***
  Because of their unique combination of cost, safety, and energy density characteristics, the recipient's novel NIBs will be easily adopted by customers and will therefore enable widespread adoption of energy storage in California. They will also provide a valuable source of continuous electricity supply during power outages and emergencies.

Notable features of this technology are its zero-carbon emissions and suitability for grid service applications and their attendant revenue streams. These benefits are in line with California's goal to achieve 100% clean electricity by 2045 (SB 1020) as well as California's New Building Energy Efficiency Standards, which mandate solar plus storage in all new residential and commercial buildings from 2023 onward. It provides ratepayers with economically viable technology to meet the above-mentioned goals while reducing costs and improving safety.

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 producing a sodium-ion battery of reduced cost and environmental burden, and increased supply chain security, safety, and energy density. The recipient has developed an advanced, novel NIB with an alternative anode which has five times the density (7.3 g/cm3) and three times the capacity (>800 mAh/g) compared to conventional hard carbon anodes. This alternative anode enables the NIB to be produced with high volumetric energy densities (350 Wh/L) which is greater than conventional sodium-ion batteries (200-250 Wh/L) and comparable to state-of-the-art LFP batteries (300-350 Wh/L), while still reducing overall costs.

The recipient's novel NIB also overcomes thermal runaway hazards due to the improved safety of the alternative anode, reducing fire safety hazard risks when compared to LIBs. The advanced sodium-ion battery demonstrates operability over a wide temperature range (-40°C to

[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).

60°C), offering the potential to serve ratepayers' energy needs even during extreme weather conditions. These performance qualities make this battery technology a promising candidate for the primary function of storing renewable energy and improving grid resiliency.

This technology contributes to California's expansion of clean electricity generation over the next two decades by improving the value proposition of energy storage, mitigating over-generation risks and reducing strain on the electrical grid.

Agreement Objectives

The objectives of this Agreement are to:

- Design and build a LRIP pilot line capable of producing 250-750 sodium-ion battery cells (1.75 - 5.25 kWh) per day using the recipient's proprietary technology.
- Validate manufacturing quality consistency featuring a failure rate of less than 5%.
- Validate the performance of the proprietary NIB with high specific energy (350 Wh/L), which uses lower-cost raw materials compared to existing batteries (<$75/kWh), does not undergo thermal runaway with safety testing, and has an operability temperature range of -40 °C to 60°C.

TASK 1 - GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

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

The Recipient shall:

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

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

- Submit the revised product and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period, or approves a request for additional time.

For products that require a final version only

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

For all products

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

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.

Exhibit A
Scope of Work
UNIGRID Inc.

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

MONTHLY CALLS, REPORTS AND INVOICES

Subtask 1.5 Monthly Calls

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

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

The CAM shall:

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

The Recipient shall:

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

Product:

- Email to CAM concurring with call summary notes.

Subtask 1.6 Quarterly Progress Reports and Invoices

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

The Recipient shall:

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

Recipient Products:

- Quarterly Progress Reports
- Invoices

CAM Product:

- Invoice template

Subtask 1.7 Final Report

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

Subtask 1.7.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.7.2 Final Report

The Recipient shall:

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

- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.

- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

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

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.8 Match Funds

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

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

The Recipient shall:

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

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

The Recipient shall:

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

  The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

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

- Copy of Each Approved Permit *(if applicable)*

Subtask 1.10 Obtain and Execute Subawards and Agreements with Site Hosts

The goals of this subtask are to: (1) procure and execute subrecipients and site host agreements, as applicable, required to carry out the tasks under this Agreement; and (2) ensure that the subrecipients and site host agreements are consistent with the Agreement terms and conditions and the Recipient's own contracting policies and procedures.

The Recipient shall:

- Execute and manage subawards and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Notify the CEC in writing immediately, but no later than five calendar days, if there is a reasonable likelihood the project site cannot be acquired or can no longer be used for the project.
- 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.
- Submit a *Subaward and Site Letter* to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required.
- If requested by the CAM, submit a draft of each *Subaward* and any *Site Host Agreement* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed *Subaward* and any *Site Host Agreement*.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding subrecipient additions in the terms and conditions).

Products:

- Subaward and Site Letter
- Draft Subawards *(if requested by the CAM)*
- Draft Site Host Agreement *(if requested by the CAM)*
- Final Subawards *(if requested by the CAM)*
- Final Site Host Agreement *(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;
- 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 1.12 TAC Meetings

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

The Recipient shall:

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

The TAC shall:

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that 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 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

III. TECHNICAL TASKS

TASK 2 - DESIGN AND DEVELOP A SODIUM-ION BATTERY COMPONENT PRODUCTION SYSTEM

The goals of this task are to design, build, and procure the recipient's NIB components to be used in the sodium-ion cylindrical cell LRIP line, namely the alternative anode, the electrolyte, and the cathode.

Subtask 2.1: Procure, Develop and Demonstrate a Slurry Processing Coating System for the Alternative Anode

The Recipient shall:

- Establish the protocols to process alternative anode material into a slurry and test the slurry for its properties.
- Procure and install a slot-die coating system for the alternative anode material slurry.
- Demonstrate a continuous alternative anode coating and drying process to produce >50 m^2 electrode per batch.
- Procure and install a post-coating calendaring system for the alternative electrode.
- Validate product quality based on established methods to ensure the alternative electrode meets the required specifications with regard to viscosity and solid-to-weight ratio.
- Provide *Alternative Anode Production Protocol Report* that includes, but is not limited to, the verification and testing methods to evaluate the quality of the alternative electrode (prepared at LRIP rates). This report will include an executive summary written for a nontechnical audience.

- Provide *Alternative Anode Quality Evaluation Report* that includes, but is not limited to, electrode loading, thickness and porosity, uniformity, and packing density. This report will include an executive summary written for a nontechnical audience.

Products:

- Alternative Anode Production Protocol Report
- Alternative Anode Quality Evaluation Report

Subtask 2.2: Procure, Develop, and Demonstrate Sodium Electrolyte Production Equipment

The recipient's proprietary electrolyte is designed to enable optimal performance of the alternative anode in the sodium ion battery.

The Recipient shall:

- Procure and install a mixer for the electrolyte.
- Procure environmental chamber to eliminate moisture contamination.
- Build electrolyte production vessel within environmental chamber to produce > 3L of electrolyte per batch.
- Establish verification and testing methods to demonstrate electrolyte quality and purity:
    - Ensure electrolyte meets low moisture requirements (ppm)
    - Ensure electrolyte meets ionic conductivity and viscosity requirements
- Provide an *Electrolyte Quality Evaluation Report* that includes, but is not limited to, quantity, moisture content (ppm), ionic conductivity, and viscosity. This report will include an executive summary written for a nontechnical audience.

Products:

- Electrolyte Quality Evaluation Report

Subtask 2.3: Procure and Validate the Cathodes

The recipient's innovation focuses on the alternative anode and its enabling electrolyte. Commercially available quantities of sodium cathodes will be used in the cell production line.

The Recipient shall:

- Establish characterization methods to evaluate cathode material quality, which includes scanning electron microscope (SEM) imaging, X-ray diffraction (XRD), particle size distribution (PSD), and inductively coupled plasma mass spectrometry techniques to verify the sample morphology, crystal structure, and chemical composition.
- Establish electrochemical testing methods to evaluate cathode electrode quality, which includes half cell testing to verify electrode capacity and loading.
- Procure cathode material and electrodes and perform the established testing methods.
- Provide a *Cathode Quality Evaluation Report* that includes but is not limited to powder properties such as SEM, XRD, and PSD, and electrode properties like loading and half cell data. This report will include an executive summary written for a nontechnical audience.

Products:

- Cathode Quality Evaluation Report

TASK 3 - DESIGN AND BUILD A SODIUM-ION CYLINDRICAL CELL PRODUCTION LINE

The goal of this task is to design and build a sodium-ion cylindrical cell LRIP line that incorporates the sodium-ion materials defined in Task 2. A test method will be developed to ensure critical quantities of the cylindrical cells output can be achieved to meet the LRIP targets, and that the product quality is reproducible. The sodium-ion battery production line workflow will be retrofitted from industry-standard LIB production equipment.

The Recipient shall:

- Procure sodium ion cylindrical cell production equipment, including:
  - An automated electrode (for both the alternative anode and sodium-based cathode) slitting machine.
  - An automated ultrasonic tab welding and electrode winding machine.
  - An automated cylindrical cell grooving and bottom can/top cap welding machine.
  - An automated electrolyte filling and cell sealing machine within environment chamber.
  - A cell labelling and barcoding system to track each individual cell for records and statistical analysis.
- Provide a *Sodium-ion Battery Production Protocol Report* that includes but is not limited to:
  - Establishing and defining the production process.
  - Trial battery fabrication runs and initial electrochemical testing results.
  - An executive summary written for a nontechnical audience.
- Prepare a *CPR Report* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- Sodium-ion Battery Production Protocol Report
- CPR Report

TASK 4 - DESIGN AND BUILD A CELL BINNING AND EVALUATION SYSTEM

The goal of this task is to design and build a cell binning and evaluation system that evaluates the quality of sodium ion cylindrical cells produced in Task 3, grading (or binning) the cell based on electrochemical data.

The Recipient shall:

- Procure machinery that can conduct formation cycling and testing of 250-750 cells within a controlled temperature environment.
- Define binning parameters (grading, pass/fail) and protocols required to evaluate products such as:
  - Electrochemical performance metrics.
  - Mechanical and structural integrity metrics.
- Design a cell labeling system that links the cell binning results to each cell's digital label for statistical analysis.

- Provide a *Sodium-ion Battery Production Quality Evaluation Report* on the cells produced. This includes:
  - Quantities produced, demonstrating LRIP yields targeting a failure rate of 5 percent or less.
  - An executive summary written for a nontechnical audience.
- Engage an independent third party to perform safety testing on the cell and provide an *Independent Third-Party Safety Testing Report* based on their findings.

Products:

- Sodium-ion Battery Production Quality Evaluation Report
- Independent Third-Party Safety Testing Report

TASK 5 - DEMONSTRATION AND VALIDATION OF PILOT LINE PRODUCTION

The goal of this task is to demonstrate that the three production sub-processes are integrated properly such that LRIP is achieved.

The Recipient shall:

- Create a *Verification Plan Outline* that includes but is not limited to:
  - Tests being conducted
  - Critical metrics being validated
  - Measurement tools for verification
  - Desired outcomes
- Prepare a draft and final *Verification Report* that includes but is not limited to:
  - Process and results of the final demonstration
  - Testing of the product
  - Technical issues encountered and how they were resolved
  - Lessons learned for this phase in the project
  - The recipient's raw material costs and volumetric energy density compared to conventional NIBs and LIBs with LFP cathodes.
  - An executive summary written for a nontechnical audience.
- Submit the draft *Verification Report* to the CAM for feedback and incorporate changes as requested in the final *Verification Report*.
- Submit the final *Verification Report* to CEC.

Products:

- Verification Plan Outline
- Verification Report (draft and final)

TASK 6 - EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete *the Initial Project Benefits Questionnaire*. The Initial Project Benefits Questionnaire shall be initially completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the *Annual Survey* by January 31st of each year. The Annual Survey includes but is not limited to the following information:

  - Technology commercialization progress
  - New media and publications
  - Company growth
  - Follow-on funding and awards received
- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the questionnaire drafts.
- Complete and update the project profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), 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 7 - 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.

Products:

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

IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.