



California Energy Commission July 10, 2024 Business Meeting Backup Materials for Harvest Thermal, 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

RESOLUTION NO: 24-0710-13e

STATE OF CALIFORNIA

STATE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Harvest Thermal, 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-24-006 with Harvest Thermal for a \$1,658,385 grant. This agreement, occurring in Alameda County, will develop an LRIP line to accelerate commercialization of a system that converts an ordinary water tank into a thermal battery which, combined with a smart controller, delivers space heating and hot water when needed, using the cleanest and cheapest electricity; 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



GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: EPC-24-006

B. Division Information

- 1. Division Name: ERDD
- 2. Agreement Manager: Molly Mahoney
- 3. MS-:None
- 4. Phone Number: 916-776-0790

C. Recipient's Information

- 1. Recipient's Legal Name: Harvest Thermal, Inc.
- 2. Federal ID Number: 83-4652674

D. Title of Project

Title of project: Manufacturing Scale-Up for Combined Heating and Hot Water Thermal Battery System

E. Term and Amount

- 1. Start Date: 7/15/2024
- 2. End Date: 3/31/2029
- 3. Amount: \$1,658,385.00

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:

Harvest Thermal

HARVEST THERMAL. Proposed resolution approving agreement EPC-24-006 with Harvest Thermal for a \$1,658,385 grant and adopting staff's determination that this action is exempt from CEQA. This agreement, occurring in Alameda County, will develop an LRIP line to accelerate commercialization of a system that converts an ordinary water tank into a thermal battery which, combined with a smart controller, delivers space heating and hot water when needed, using the cleanest and cheapest electricity. (EPIC funding) Contact: Benson Gilbert

G. California Environmental Quality Act (CEQA) Compliance

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

If yes, skip to question 2.



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

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

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

a) Agreement IS exempt?

Yes

Statutory Exemption?

No

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

PRC section number: None

CCR section number: None

Categorical Exemption?

Yes

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

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

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

No

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

Cal. Code Regs., tit. 14, Section 15301 provides that projects which consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public and private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use beyond that existing at the time of the lead agency's determination, are categorically exempt from the provisions of the California Environmental Quality Act.

This project will involve the development and demonstration of the Harvest Pod, and the project's activities are limited and contained within a pre-existing facility that will be used to manufacture the technology. There are no planned expansions of the site, and there will be no excessive generation of noise or odors anticipated, with no hazardous waste involved. For these reasons, the proposed work will not have any significant effect on the environment and is exempt under Cal. Code Regs., tit. 14, Section 15301.

Additionally, the project will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of



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

successive projects of the same type in the same place that might be considered significant; does not involve unusual circumstances that might have a significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and this project will not have a significant effect on the environment.

b) Agreement IS NOT exempt.

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

No

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

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

H. Is this project considered "Infrastructure"?

No

I. Subcontractors

List all Subcontractors listed in the Budget (s) (major and minor). Insert additional rows if needed. If no subcontractors to report, enter "No subcontractors to report" and "0" to funds. **Delete** any unused rows from the table.

Subcontractor Legal Company Name	CEC Funds	Match Funds
GainShare Consultants LLC	\$ 307,930	\$71,120
TBD - Industrial Engineer	\$ 85,000	\$0
Right Brain Electronics, LLC	\$ 50,000	\$0
ALS Group USA, Corp.	\$ 10,000	\$0
TBD - Robotics and Vision Systems	\$0	\$94,960
TBD - System Implementation	\$0	\$50,000
Sonic Manufacturing Technologies, Inc.	\$0	\$329,160
TBD - System Development & Updates	\$0	\$50,000



Subcontractor Legal Company Name	CEC Funds	Match Funds
SGS North America Inc.	\$0	\$15,000

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	\$ 1,658,385

TOTAL Amount: \$ 1,658,385

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: Didier Wimmers

Address: 633 Coventry Rd

City, State, Zip: Kensington, CA 94707-1318

Phone: 408-981-3104

E-Mail: didier@harvest-thermal.com



3. Recipient's Project Manager

Name: Didier Wimmers

Address: 633 Coventry Rd

City, State, Zip: Kensington, CA 94707-1318

Phone: 408-981-3104

E-Mail: didier@harvest-thermal.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".

ltem 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: Molly Mahoney

Approval Date: 5/20/2024

Branch Manager: Anthony Ng

Approval Date: 5/22/2024

Director: Anthony Ng for Jonah Steinbuck

Approval Date: 5/22/2024

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Production Tooling Design, Purchase, and Installation.
3	Х	Develop Reliable and Responsive Supply Chain with Supporting
		Systems
4	Х	Demonstration of Pilot Line Production
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
DVT	Design Validation and Testing
EPIC	Electric Program Investment Charge
ERP	Enterprise Resource Planning
GHG	Greenhouse Gas
HHW	Heating and Hot Water
HVAC	Heating Ventilation Air Conditioning
IOU	Investor-Owned Utility
LRIP	Low Rate Initial Production
MES	Manufacturing Execution System
OEM	Original Equipment Manufacturer
PVT	Production Validation and Testing
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

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. To date no content has been provided.

The purpose of this Agreement is to fund the design, build, and validation of a Low-Rate Initial Production (LRIP) line for the Harvest Pod. The decarbonization of the built environment is one of the keys to keeping global temperatures to safe levels. But, simply electrifying everything without ensuring new equipment helps integrate renewable energy on the grid and reduce demand at peak times could result in an unnecessarily costly and fragile electric grid. Thermal storage that shifts electric load can make a significant difference in cost-effectively achieving our climate goals.

This Agreement will allow the Harvest Pod to be introduced to the market more widely, which will support the electrification transition. The Harvest Pod has been successfully deployed in an initial small batch quantity production. These units have been hand-built thus far and will require the manufacturing process to evolve in order to create a viable business. Deployed at scale, the Recipient's load-shifting capabilities will enable the use of more renewable energy, smoothing grid peak demand and making the grid more resilient.

B. Problem/ Solution Statement

Problem

Heating, hot water, and cooling represent the top three energy uses in California households, contributing significantly to greenhouse gas (GHG) emissions. Electric HVAC (heating ventilation and air conditioning) solutions are the best technology for meeting our climate goals but the options commercially available have limitations: they often operate at peak demand times, and they do not reduce operating costs sufficiently compared to gas to create a compelling life cycle cost value proposition. Reliance on these market solutions will cause the state to overbuild renewable energy generation and storage in an effort to meet its goals. There is no known technology available today that achieves the Recipient's system GHG reduction while optimizing the use of grid electricity outside of peak usage/demand.

Solution

To enable the large-scale transition to lower emissions solutions, the Recipient has developed a smart controller for a home heating, cooling, and hot water system that has near-zero emissions (including emissions from power generation), pollutes significantly less than competing technology, is affordable to install and operate, and is suitable for new homes and retrofits.

The product at the heart of the system is an appliance -the "Harvest Pod"- developed and built by the Recipient. Incorporating electronic and physical flow controls, the Harvest Pod controls off-the-shelf equipment (heat pump, water tank and air handler) to deliver space conditioning and hot water. Using the tank as a thermal battery, the Pod shifts the majority of a home's electric load to non-peak times. Users benefit from lower costs and society benefits from reduced GHG emissions and improved flexibility in grid management to allow a greater shift to renewables while mitigating peak loads.

In pilot tests conducted over 18 months, the Harvest System demonstrated bill savings upwards of 30%, while reducing home HHW-related GHG emissions by 85% and higher. This is consistent with earlier measurements conducted for the National Science Foundation (Project 1938079² SBIR Phase I: Very-Low Emissions Heating, Cooling, and Hot Water System). Over the 18-year

² <u>https://www.nsf.gov/awardsearch/showAward?AWD_ID=1938079</u>

life of HHW systems, these savings enable one year of LRIP production capacity (4,800 Pods) to deliver to ratepayers a total life cycle savings of over \$39M compared to gas systems, and over \$28M compared to other heat pump systems. The project addresses the following barriers to widespread adoption:

Production Rate and Cost— In the present pre-production state, Harvest lacks the equipment and tooling necessary to deliver volumes necessary for seed commercialization. Investment in LRIP equipment and systems provides the capacity to support the rapid adoption of Harvest's technology.

Supply Chain Management— Global supply chain realities of 2022-23 and the uncertainties raised by new product adoption increase the need for alternative suppliers and components. Spreadsheet-based supply management hampers the ability to enter production and adjust to change and disruption. Investment in supply chain management systems PLM, Enterprise Resource Planning (ERP), and Manufacturing Execution System (MES) will reduce time to market and increase the available market.

Quality— Initial prototype assembly methods do not provide the robust measurement and inspection tools needed to ensure low initial defect rates. Investment in measurement and inspection tools and data management systems ensures excellent customer experience, removing a potential barrier to new technology adoption.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Achieve production cost, throughput, and quality control that will support market demands for the Recipient's Harvest Pod technology.
- Achieve LRIP for the Recipient's Harvest Pod technology.

Ratepayer Benefits³ — This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety, by enabling the low volume ramp of the Harvest Thermal technology which costs less to install and operate than conventional gas and heat pump solutions. Other ratepayer benefits include:

- *Economic development*: Reducing energy costs frees up disposable income, supporting local economies. The overall affordability of the solution enables higher uptake and an accelerated replacement cycle, driving more local installation jobs.
- *Environmental benefits*: By optimizing the system for efficiency and decoupling the time of electricity purchase from the use of space conditioning and hot water, the system uses electricity when it is the lowest cost and cleanest, resulting in emissions reductions of 80-90% for most homes.

³ 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,

- *Public health*: Eliminating combustion gases from space and water heating results in better air quality in homes by reducing CO and other particulates from combustion.
- *Consumer appeal:* Occupants can enjoy the system's comfort and affordability without having to actively manage the Harvest Pod or change behavior. The system will incorporate Internet of Things capabilities, providing users with full control, data, and charts.
- *Increased safety*: Removal of natural gas reduces the risk of fires and explosions in homes, particularly in an earthquake, enhancing public safety. Using a water tank for load shifting is inherently safe and stable.
- *Electric grid cost reduction and resilience:* The ability to shift the full heating and hot water load of homes to off-peak times enables the state to achieve its renewable energy and resilience goals at a lower cost than with conventional heat pump systems. The state has ambitious goals of 50% renewable energy by 2025, 60% by 2030, and 100% by 2045 (SB 100). Demand-side flexibility like that provided by Harvest is necessary to achieve these goals cost-effectively while minimizing the need to overbuild renewable energy generation and storage. This project will further expand on these benefits by reducing the up-front cost of the Harvest Pod and implementing quality tests and reliability systems to maximize the performance and reliability of the overall system.

Technological Advancement and Breakthroughs— This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of State statutory energy goals by providing significant reductions in the following areas:

- GHG emissions reductions: Between 80 and 95% lower than natural gas and 35-45% compared to conventional heat pumps without load shifting.
- Operational cost reductions: Up to 30% less than heat pump solutions and 20-45% compared to existing natural gas technology.
- Barriers to product availability: California manufacturing volumes will meet the installer demand that is on the Harvest Thermal waitlist.
- Barriers to knowledge: Advancing knowledge of low-carbon combination systems.

The GHG reductions and operational cost reductions will be realized through thermal storage and load shifting. The table below shows the calculated storage capacity and equivalent kWh storage by tank volume.

Storage Volume	80 gal	120 gal	160 gal
Storage Capacity (150ºF)	4 kWh	7 kWh	10 kWh
Hours of Load Shifting	1.5 - 2.5 hrs.	2.5 - 4 hrs.	4 - 6 hrs.

Agreement Objectives

The objectives of this agreement are to:

- Reduce Harvest Pod "Cost of Goods Sold" by at least 10% from baseline
- Achieve a 95% minimum end to end process yield
- Ability to produce \geq 10 units per day average

- At least 50% of BOM components are multi-sourced
- Demonstrate that the technology solution works with these manufactured units (successful customers installation).
- Design and implement a production line for Harvest pod and related components.
- Develop customized components and assembly tooling.
- Specify and implement systems for supply chain planning, communication, and governance.
- Secure a supply network with long-term agreements and establish volume orders.
- Train a diverse installer workforce.

The design and implementation are to be finished within 12 months, with full qualification through LRIP demonstration within 18 months, closing out all program deliverables and knowledge transfer within a 2.5-year program.

I.

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

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

The Recipient shall:

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

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

For products that require a final version only

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

For all products

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

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 <u>administrative portion</u> 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 <u>technical portion</u> of the meeting will include discussion of the following:

- o 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);
- o 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
 - o 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

- 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:
 - o Comments the recipient proposes to incorporate.
 - o 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 <u>no match funds</u> 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 <u>no permits</u> 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 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 1.11 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.

- 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 1.12 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.

- 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

Quality—Initial prototype assembly methods do not provide the robust measurement and inspection tools needed to ensure low initial defect rates. Investment in measurement and inspection tools and data management systems ensures excellent customer experience, removing a potential barrier faced by new technology adoption.

IV. TECHNICAL TASKS

TASK 2: PRODUCTION TOOLING DESIGN, PURCHASE, AND INSTALLATION

The goals of these tasks are to identify, purchase, and install all necessary equipment for LRIP production to achieve production cost, throughput, and quality that support the market demand for the Harvest Pod.

Subtask 2.1 Assess, Specify, and Design Production Line

The Recipient shall:

- Evaluate the needed cycle time, layout, and efficiencies.
- Develop the initial needed processes, testing, yield, and margin requirements.
- Confirm key tooling and equipment needed and document the requirements.
- Create preliminary station designs, concepts, and concept prototypes.
- Work with equipment manufacturers to specify the processes and equipment.
- Design in-house jigs and processes.
- Identify any labor requirements for process and equipment operation and create a staffing plan with a priority on training existing staff in operations.
- Prepare the *Draft Production Tooling Design Report* that includes but is not limited to:
 - Overall production capacity model
 - Critical equipment list
 - Expected requirements for identified equipment
 - Updated equipment costs
 - Procurement and delivery schedule for critical equipment
 - Identified risks/issues and mitigation plans
- Create a *Design, Planning, and Evaluation Report*. This report will include but is not limited to:
 - Describe the production line planning process and what factors were considered.
 - This report will be 3-10 pages and will include graphics, figures, and will include an executive summary written for a non-technical audience.

Products:

- Production Tooling Design Report (Draft and Final)
- Design, Planning, and Evaluation Report

Subtask 2.2 Quote, Select, Procure, and Factory Acceptance Test/Site Acceptance Test

The Recipient shall:

• Prepare the *Draft Equipment Acceptance Test Report* that includes, but is not limited to:

- Define criteria for factory acceptance (vendor site) prior to shipping, and site acceptance (production site) of the equipment once shipped and received.
- Solicit quotes for, select, and procure OEM components:
 - Solicit quotes for and make final supplier selections and place orders,
 - Schedule and plan shipping and qualification of components.
- Solicit quotes for, select, and procure equipment to include but not limited to:
 - Solicit quotes for and make final supplier selections and place orders,
 - Schedule and plan shipping and receiving of equipment.
- Perform factory acceptance testing, including but not limited to:
 - Document factory acceptance test results,
 - Create a corrective action plan for any acceptance failures,
 - Revised delivery schedules as needed,
 - Confirm transit and installation requirements with any modifications.
- Receive and install new equipment following planned scheduling and factory acceptance test plan.
- Prepare *Equipment Acceptance Test Report* (Final) that is 3-10 pages, will contain graphics and figures, and will have an executive summary that is written for a non-technical audience. The report will include, but is not limited to:
 - A description of the procurement process,
 - A description of the factory and site acceptance process,
 - OEM component first article reports,
 - Installation reporting with delivery dates,
 - Closure of corrective action plans, and
 - Manufacturing site acceptance test results.

Products:

• Equipment Acceptance Test Report (Draft and Final)

TASK 3: DEVELOP A RELIABLE AND RESPONSIVE SUPPLY CHAIN WITH SUPPORTING SYSTEMS

The goals of these tasks are to scale supply chain capabilities and implement control and monitoring systems that provide visibility to production work in progress, quality status and enable continuous quality improvement.

- Review existing supply network and develop gap analysis and mitigation plans. Topics for review include, but are not limited to:
 - Supply capacity
 - Supplier governance
- Achieve material cost reductions through contracts, sourcing, and alternative development. Considered factors for review include, but are not limited to:
 - Supply contracts— Long-term agreements, volume orders, obtain favorable pricing.
 - Multi-sourcing— Review, qualify, and approve alternative parts and suppliers.
 - Alternative design qualification— Identify critical components for alternative design and perform appropriate product re-qualifications.
- Design systems for demand management, contract manufacturing control, and execution.
- Analyze usage cases and specify ERP implementation for demand and supply

management. Emphasize unique business process needs including but not limited to:

- Sales forecasting, product customization
- Linkage to contract manufacturing systems
- Product lifecycle and data management
- Analyze usage cases and specify MES implementation for contract manufacturing visibility and control. Emphasize unique business process needs including but not limited to:
 - Configurable product with flexible bill of materials
 - Third party manufacturing
 - Collection of product construction and test data
- Implement systems for demand management, contract manufacturing control and execution and prepare a *Systems Management and Control Report* (Draft and Final). Steps include but are not limited to:
 - Perform software package and implementation vendor selection.
 - Develop acceptance criteria.
 - Procure software and manage implementation contracts.
 - Perform initial acceptance qualification.
 - Develop exceptions and corrective action plans.
 - Perform final acceptance qualification.
- Prepare *Supply Network Design Report (Draft and Final)* that is 3-10 pages, will contain graphics and figures, and will have an executive summary that is written for a non-technical audience that includes but is not limited to:
 - Supply network analysis (capacity, risks, mitigations),
 - Cost reduction roadmap,
 - System architecture diagram and analysis,
 - Acceptance criteria for PLM, ERP and MES implementation (Draft), and
 - Completed results for acceptance criteria (Final).
- Prepare a CPR Report #1 in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- Systems Management and Control Report (Draft and Final)
- Supply Network Design Report (Draft and Final)
- CPR #1

TASK 4: DEMONSTRATION OF PILOT LINE PRODUCTION

The goal of this task is to demonstrate low-rate initial production at the specified throughput and quality levels. The Recipient will use LRIP results to update manufacturing cost models, yield analysis, and production rate analysis.

- If purchasing new equipment, select, receive, and commission each piece of equipment
- Establish verification and testing methods to demonstrate low rate initial production at a minimum of twenty installation-ready pods per day, achieved in two phases.
- Set up documentation and draft standard operating procedures
- Hire additional production team members:
 - Advertise job openings, using strategies that promote diversity and inclusion
 - Screen applications and interview candidates, practicing unconscious bias interview techniques

- Hire, onboard and train new team members according to standard operating procedures
- Conduct the design, validation, and testing phase for initial and final manufacturing yields.
- Create a draft LRIP Verification Report that includes but is not limited to an outline of:
 - The tests being conducted,
 - Critical metrics being validated, and
 - Measurement tools for verification.
- Prepare and submit *Verification Report (draft and final)* to the CAM for feedback and incorporate changes as requested. This document will be 5-20 pages, will include graphics and figures, and will have an executive summary that is written for a non-technical audience. The report contents will include but is not limited to:
 - Process and results of the final demonstration
 - \circ $\;$ Testing of the product from DVT/PVT phases $\;$
 - o Technical issues, resolved or prioritized for further activity
 - Production steps and processes involved
 - o Manufacturing time and key performance indicators
 - Production equipment with preventative and maintenance tasks
 - Workforce needs
 - Final supply chain analysis
 - Traceability requirements following industry best practices
 - Rigorous quality control process
 - Lessons learned for each phase in the project
- Prepare a *CPR Report* #2 in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- LRIP Verification Report (draft and final)
- CPR Report #2

TASK 5: EVALUATION OF PROJECT BENEFITS

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

- 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, and
 - 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 <u>Energize Innovation website</u> (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 <u>Energize Innovation website</u> (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 Case Study 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.

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.