



GRANT REQUEST FORM (GRF)

A) New Agreement # EPC-20-037 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
ERDD	Maggie Deng		916-776-0749

C) Recipient's Legal Name	Federal ID Number
Stasis Energy Group LLC	84-4183759

D) Title of Project
Stasis Energy Group Thermal Energy Storage System (TESS) for Packaged HVAC Systems

E) Term and Amount

Start Date	End Date	Amount
6/1/2021	3/31/2025	\$ 1,634,740

F) Business Meeting Information

ARFVTP agreements \$75K and under delegated to Executive Director

Proposed Business Meeting Date 5/12/2021 Consent Discussion

Business Meeting Presenter Michael Ferreira Time Needed: 5 minutes

Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description:

STASIS ENERGY GROUP LLC. Proposed resolution approving Agreement EPC-20-037 with Stasis Energy Group LLC for a \$1,634,740 grant to demonstrate its Thermal Energy Storage Systems (TESS) at 10 commercial buildings, with more than half of the demonstration sites located in disadvantaged or low-income communities, and adopting staff's determination that this action is exempt from CEQA. The proposed TESS uses a bio-based phase change material which stores energy harvested from the HVAC system during daily cooling operations and releases the energy during the costliest electricity generation periods of the day. In addition, the TESS cloud-connected controller can optimize thermal storage use, manage comfort settings for building occupants, and provide real-time and historical data on installed units. (EPIC funding) Contact: Michael Ferreira. Staff Presentation: 5 minutes

G) California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?
 - Yes (skip to question 2)
 - No (complete the following (PRC 21065 and 14 CCR 15378)):
2. If Agreement is considered a "Project" under CEQA:
 - a) Agreement **IS** exempt.
 - Statutory Exemption. List PRC and/or CCR section number:
 - Categorical Exemption. List CCR section number:
Cal. Code Regs., tit. 14, § 15301; Cal. Code Regs., tit. 14, § 15302
 - Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:



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This project will involve HVAC retrofits to replace existing equipment at existing facilities with first of its kind thermal energy storage systems followed by measurement and verification activities, including:

- o Six retrofit sites to demonstrate cooling performance only
- o Two retrofit sites to demonstrate cooling combined with heating
- o Two pre-existing, new-build sites to demonstrate installation efficiencies
- o Installation of RTU temperature sensors: ambient, supply air, return air, mixed air and room temperature sensors
- o Installation of 3-phase energy sub-meters
- o Installation of wireless room temperature sensors
- o Removal of thermostats and installation of Smart Key controller keypad.

Cal. Code Regs., tit. 14, Section 15301 provides that the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing structures, facilities, mechanical equipment or topographical features involving negligible or no expansion of use beyond that existing are categorically exempt from the provisions of CEQA. This project will involve minor alterations at existing facilities. Therefore, this project is exempt under California Code of Regulations, title 14, sections 15301.

Cal. Code Regs., tit. 14, Section 15302 provides an exemption where the project involved consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. This project will involve retrofits to replace existing HVAC equipment. Therefore, this project is exempt under California Code of Regulations, title 14, sections 15302.

b) Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- Initial Study
- Negative Declaration
- Mitigated Negative Declaration
- Environmental Impact Report
- Statement of Overriding Considerations

H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)

Legal Company Name:	Budget
Build Smart Group	\$ 120,000
Winn Energy Controls, Inc.	\$ 50,000
RMS Energy Consulting, LLC	\$ 214,952
TBD-Task 3 System Installers	\$ 50,000
TBD-Task 5 System Installers	\$ 150,000
Greer, Burns & Crain, Ltd.	\$ 50,000
Thermal Energy System Specialists, LLC (Match \$75,000)	\$ 0 (match only)
ToolTex ^(OBJ) (Match \$60,000)	\$ 0 (match only)



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Legal Company Name:	Budget
Intertek USA Inc. (Match \$20,000)	\$ 0 (match only)

I) List all key partners: (attach additional sheets as necessary)

Legal Company Name:

J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	19-20	301.001G	\$1,634,740
			\$

R&D Program Area: EDMFO: EDMF

TOTAL: \$ 1,634,740

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Rob Morton
Address: 1263 Milano PI
City, State, Zip: Pomona, CA 91766-1004
Phone: 720-435-4550
E-Mail: rmorton@stasisenergygroup.com

2. Recipient's Project Manager

Name: Rob Morton
Address: 1263 Milano PI
City, State, Zip: Pomona, CA 91766-1004
Phone: 720-435-4550
E-Mail: rmorton@stasisenergygroup.com

L) Selection Process Used

Competitive Solicitation Solicitation #: GFO-20-301

First Come First Served Solicitation Solicitation #:

M) The following items should be attached to this GRF

- | | | |
|-----------------------------------------------------|-----------------------------------------|----------------------------------------------|
| 1. Exhibit A, Scope of Work | <input checked="" type="checkbox"/> | Attached |
| 2. Exhibit B, Budget Detail | <input checked="" type="checkbox"/> | Attached |
| 3. CEC 105, Questionnaire for Identifying Conflicts | <input checked="" type="checkbox"/> | Attached |
| 4. Recipient Resolution | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date



STATE OF CALIFORNIA

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CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

Deputy Director

Date

Exhibit A Scope of Work Stasis Energy Group LLC

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Pre-installation Planning
3	X	Measurement & Verification Plan
4		Product and Controls Improvement
5		Baseline Installation and Data Collection
6		TESS Installation and Data Collection
7		Data Analysis
8		Evaluation of Project Benefits
9		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
DAC	Disadvantaged Communities
DER	Distributed Energy Resources
GHG	Greenhouse Gas
HVAC	Heating, Ventilation and Air Conditioning
IOU	Investor Owned Utility
LIC	Low-Income Communities
M&V	Measurement & Verification
MTLC	Multitenant Light Commercial [buildings]
PCM	Phase Change Materials
PSPS	Public Safety Power Shutoff
Recipient	Stasis Energy Group LLC
RTU	Roof-Top Unit
SEG	Stasis Energy Group
TAC	Technical Advisory Committee
TESS	Thermal Energy Storage System

¹ Please see subtask 1.3 in Part III of the Scope of Work (General Project Tasks) for a description of Critical Project Review (CPR) Meetings.

Exhibit A
Scope of Work
Stasis Energy Group LLC

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

A. Purpose of Agreement

The purpose of this Agreement is to fund technology deployment and demonstration of ten of the Recipient's Thermal Energy Storage System (TESS) installations in packaged heating, ventilation, and air conditioning (HVAC) systems throughout California investor owned utility (IOU) territories and demonstrate peak shifting performance across a wide range of roof-top unit (RTU) types, climate zones, and buildings. This project will include a comprehensive Measurement & Verification (M&V) plan to prove benefits to California utilities and ratepayer and a Technology Transfer Plan to accelerate commercialization of the technology.

B. Problem/ Solution Statement

Problem

The California Energy Commission (CEC) and California IOUs face a daunting challenge to transition to 100% renewable energy by 2045. California's climate goals will require reduction of peak period electric usage, when Greenhouse Gas (GHG) emissions are highest. Reducing energy use in existing buildings will be crucial to achieving these goals. Flexible distributed energy resources (DERs) can help California succeed in this transition, and these DERs require thermal batteries such as TESS, electric batteries, and other types of resources. New products and technologies, such as the Recipient's TESS, must be developed and introduced to the market to reach these goals. Benefits to California's energy providers and utilities must include reduction in peak energy use when power is the most expensive and when generating power has the highest carbon intensity. Benefits must be shared with ratepayers in the form of lower utility bills.

Packaged HVAC roof-top equipment services as much as 70% of California's light commercial floor space, accounting for more than 22 billion kWh per year. Up to 95% of these RTUs, approximately 5 million tons of HVAC capacity, are sized at 10 tons or less. Most units have 10-20 years of service life remaining. Few, if any, technologies adequately and economically address this large market. Late afternoon and evening energy used by commercial buildings RTUs have proven to be a hard-to-reach segment of California's electricity usage.

Solution

The Recipient has developed a first-of-its-kind TESS for installation in existing and new packaged HVAC systems used in small and medium size commercial buildings, which is the most common HVAC unit types in use. The product is intended to be easily and economically installed or retrofitted into existing packaged HVAC systems to provide a cost-effective solution. This solution provides an alternative to costly unit removal and replacement. TESS can relieve late-day grid demand as wind and solar electricity generation diminishes by shifting RTU HVAC electricity out of peak periods. The proposed solution aims to benefit California IOUs by shifting HVAC electricity use out of peak periods — when electricity is the most expensive and when generating electricity has the highest carbon intensity — and to benefit California ratepayers by lowering energy bills.

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C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to install ten TESS systems in small and medium size commercial buildings in California and:

- Demonstrate their ability to shift electric load out of peak periods.
- Prove utility bill savings to business owners across a wide variety of product usage characteristics.
- Calculate benefits to grid operators for use in developing incentives to drive adoption.
- Improve product and controller performance to deliver 12-month performance.
- Lower product first-costs to ≤ 5 years payback to facilitate market adoption.
- Develop energy modeling tools to aid in TESS engineering and deployment
- Prepare for commercialization at scale.

Ratepayer Benefits:²

This Agreement will result in the ratepayer benefits of:

- **Greater reliability:** The product aims to simplify the challenge facing grid operators by increasing use of daytime renewable energy and reducing use of late-afternoon and evening ramp-up energy, thus reducing the risk of energy shortages, Public Safety Power Shutoffs (PSPSs), brownouts, and blackouts.
- **Lower costs:** The proposed technology is intended to lower electricity costs of business owners by shifting their use out of peak periods, as well. The Recipient's TESS should be capable of a wide range of energy shifting configurations to meet regional rate plans and grid challenges. It can save businesses electric bill expenses through reduced demand charges based on peak kW usage and by shifting kWh usage into lower priced periods.

Technological Advancement and Breakthroughs:³

This Agreement is intended to lead to technological advancement and breakthroughs to overcome barriers to achievement of the State of California's statutory energy goals by supporting development of first-of-its-kind thermal energy storage technology. The project will target a hard-to-reach segment of electricity usage, 4-9 pm, when energy demand is high and renewable contributions diminish. As a result, GHG emissions savings of 10,530 metric tons of carbon dioxide (MT co2) are predicted annually at 10% adoption, helping California meet its various statutory climate goals. This development and demonstration project can ensure this technology will reach maturity and be introduced significantly to the market.

Agreement Objectives

The objectives of this Agreement are 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).

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- Increase demonstrated peak kW reduction capability from 60% to 80% through product improvement and controller refinements.
- Lengthen periods of load shifting ability from 2 ½ hours to 4-5 hours during peak periods.
- Demonstrate \$1,000 or more in annual utility cost savings per HVAC unit in a variety of buildings and configurations for a typical 5-ton RTU during summer months.
- Demonstrate \$500 or more in annual utility cost savings outside of Summer months per each 5-ton RTU.
- Reduce the out of pocket expense to the business owner by \$250-\$500 per HVAC unit through product and process improvement, and technology transfer task work.
- Demonstrate 99.5% achievement of occupant comfort in a variety of buildings and configurations.

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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 CEC’s 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.

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The following describes the accepted formats for electronic data and documents provided to the CEC as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
 - Text documents will be in MS Word file format, version 2007 or later.
 - Project management documents will be in Microsoft Project file format, version 2007 or later.
- **Software Application Development**
Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:
- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
 - Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
 - Visual Studio.NET (version 2008 and up). Recommend 2010.
 - C# Programming Language with Presentation (UI), Business Object and Data Layers.
 - SQL (Structured Query Language).
 - Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
 - Microsoft SQL Reporting Services. Recommend 2008 R2.
 - XML (external interfaces).

Any exceptions to the Electronic File Format requirements above must be approved in writing by the CAM. The CAM will consult with the CEC's Information Technology Services Branch to determine whether the exceptions are allowable.

MEETINGS

Subtask 1.2 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

- Attend a "Kick-off" meeting with the CAM, the Commission Agreement Officer (CAO), and any other CEC staff relevant to the Agreement. The Recipient will bring its Project Manager and any other individuals designated by the CAM to this meeting. The administrative and technical aspects of the Agreement will be discussed at the meeting. Prior to the meeting, the CAM will provide an agenda to all potential meeting participants. The meeting may take place in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.

The administrative portion of the meeting will include discussion of the following:

- Terms and conditions of the Agreement;
- Invoicing and auditing procedures;
- Administrative products (subtask 1.1);

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- 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.

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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
- Progress Determination

Subtask 1.4 Final Meeting

The goal of this subtask is to complete the closeout of this Agreement.

The Recipient shall:

- Meet with CEC staff to present project findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement. This meeting will be attended by the Recipient and CAM, at a minimum. The meeting may occur in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.

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The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the CAM's discretion.

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM 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

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Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement.

When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

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

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- 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
- Draft Final Report
- Written Responses to Comments (*if applicable*)
- Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

If match funds were a part of the proposal that led to the CEC awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its

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owner and provide a contact name, address, telephone number, and the address where the property is located.

- If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

- Match Funds Status Letter
- Supplemental Match Funds Notification Letter (*if applicable*)
- Match Funds Reduction Notification Letter (*if applicable*)

Subtask 1.8 Permits

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

The Recipient shall:

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

The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

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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.

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- 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.

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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 1.12 Project Performance Metrics

The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the project performance metrics from the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.

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- 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

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IV. TECHNICAL TASKS

*Products that require a draft version are indicated by marking “(draft and final)” after the product name in the “Products” section of the task/subtask. If “(draft and final)” does not appear after the product name, only a final version of the product is required. **Subtask 1.1 (Products)** describes the procedure for submitting products to the CAM.*

TASK 2: PRE-INSTALLATION OPERATIONS PLANNING

The goals of this task are to:

- plan for a smooth and successful project and identify appropriate sites for TESS installation.
- identify improvements to product and controller logic for enhanced field performance.

The Recipient shall:

- Develop a *List of Pilot Deployment Sites* and submit to CAM for written approval. List shall include, but not be limited to:
 - Six retrofit sites to demonstrate cooling performance only
 - Two retrofit sites to demonstrate cooling combined with heating
 - Two pre-existing new-build sites to demonstrate installation efficiencies
 - Suitable HVAC unit equipment characteristics
 - Single and multiple RTU HVAC units
 - Reasonable occupant loading
 - Multiple Climate Zones
 - Wide range of building construction types
 - Wide range of business types and operating hours
 - Different IOU rate schedules
 - Prioritization of sites
 - High level schedule of implementation
- Develop the *Product Refinement Plan* that includes but is not limited to:
 - Improved aluminum thermal storage plate design
 - Reduced number of panel penetrations for PCM filling
 - Improved panel fill port design
 - Standardized TESS enclosure and duct transitions
 - Improved insulation of TESS enclosure
 - Schematic plans for winter by-pass duct with automated dampener
 - Improved PCM temperature sensor seat and mount
 - Prioritization of improvements
 - Work with TAC for approval
- Develop the *Controller Logic Refinement Plan* that includes but is not limited to:
 - Identify spring, fall, and winter season controller software improvements to be developed
 - Create outline for automated bypass damper operations
 - Create high-level logic architecture for real-time weather data acquisition
 - Outline scope of fault detection enhancements
 - Create high-level sequence of operations flowchart
 - Prioritization of improvements
 - Work with TAC for approval

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Products:

- List of Pilot Deployment Sites
- Product Refinement Plan
- Controller Logic Refinement Plan

TASK 3: MEASUREMENT & VERIFICATION (M&V) PLAN

The goals of this task are to plan for measurement and verification of product performance to ensure high fidelity data acquisition and to specify data monitoring instrumentation and at each installation site.

The Recipient shall:

- Develop the *Measurement & Verification Plan* that includes but is not limited to:
 - International Performance Measurement and Verification Protocol Option B retrofit isolation M&V methods and protocol
 - Evaluating the effectiveness and performance of existing equipment
 - Detailed field monitoring of pilot test sites pre- and post-TESS installation
 - Methods to identify peak load (kW) reduced
 - Methods to identify peak period energy (kWh) shifted out of peak periods
 - Methods to validate energy consumption (kWh) savings from increased HVAC efficiency
 - Outline of regression analysis models where applicable
 - Collection of accurate data suitable for calibrating energy models
 - Ensuring utility-grade data capture necessary for analysis
 - Identification of indirect benefits of technology
 - Submit to CAM for written approval
- Develop the *Baseline and TESS Instrumentation and Installation Plan* that includes but is not limited to:
 - Specification of data monitoring devices necessary to measure energy use
 - Specification of wireless temperature sensors to monitor room temperatures
 - Develop detailed installation plan for PCM controller
 - Develop detailed installation plan for monitoring devices
 - Develop detailed plan for temperature sensor placement
 - Submit to CAM for written approval
- Prepare a *CPR Report* and participate in a CPR meeting in accordance with Subtask 1.3 (CPR Meetings).

Products:

- Measurement & Verification Plan (Draft and Final)
- Baseline and TESS Instrumentation and Installation Plan (Draft and Final)
- CPR Report

Exhibit A
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TASK 4: PRODUCT AND CONTROLS IMPROVEMENT

The goals of this task are to implement the *Product Refinement Plan* and *Controller Logic Refinement Plan*, developed in Task 2, to improve the physical product and controller logic operations. At the conclusion of this task, the team will deliver *TESS Design Summary Report* and *Controller Logic v 2.0 Design Summary Report*.

The Recipient shall:

- Execute the *Product Refinement Plan* including but not limited to:
 - Creation of computer simulation models to optimize panel design
 - Order of manufacturing dies for new aluminum panels
 - Manufacture of new aluminum panels
 - Implement revised integrated fill ports into aluminum panels
 - Manufacture of new enclosures and duct transitions
 - Manufacture of improved insulation integrated with enclosure
 - Bench test winter bypass duct with automated dampener
 - ASTM E 84 Fire Testing of revised panels
 - Panel manufacturing process qualification by an accredited body
 - Produce schematic drawings of all upgrades to product
 - Produce *TESS Design Summary Report*, which includes, but is not limited to:
 - Summary of steps taken to reach final design of TESS assembly
 - Computer simulations results summary memo
 - ASTM E 84 Fire Test results
 - Schematic drawing of TESS assembly

- Execute the *Controller Logic Refinement Plan* including but not limited to:
 - Write controller program logic and firmware upgrades for shoulder and winter seasons
 - Write program logic for real-time weather data acquisition
 - Write program logic to operate bypass dampener
 - Implement fault detection program features
 - Integrate automated damper operations with controller logic and map to board
 - Implement controller sequence of operations logic
 - Beta test new logic on lab units
 - Field test new logic on current pilot field units
 - Produce *Controller v 2.0 Design Summary Report*, which includes, but is not limited to:
 - Summary of steps taken to improve Controller logic
 - Computer simulations results summary memo
 - Beta testing results summary

Products:

- TESS Design Summary Report
- Controller Logic v 2.0 Design Summary Report

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TASK 5: INSTRUMENTATION INSTALLATION AND BASELINE PERFORMANCE MONITORING

The goals of this task are to install Baseline Data Monitoring devices in accordance with Task 3 *Measurement and Verification Plan* and the *Baseline and TESS Instrumentation and Installation Plan* in approved pilot sites to begin collecting pre-retrofit energy data for each site. This task represents the beginning of the field work for the project. Upon completion of data collection devices at each site, a *Baseline Data Monitoring Report (Draft/Final)* will be issued.

The Recipient shall:

- Execute the *Baseline and TESS Instrumentation and Installation Plan* including but not limited to these subtasks for each site:
 - Acquire historical energy use data from utility company for background review
 - Installation of Phase Change Materials (PCM) controller at RTU
 - Installation of the following RTU temperature sensors: ambient, supply air, return air, mixed air, and room temperature sensors
 - Installation of 3-phase energy sub-meters
 - Installation of wireless room temperature sensors
 - Removal of thermostats and installation of Smart Key controller keypad
 - Train pilot occupants on Smart Key operations
 - Testing and calibration of installed sensors and hardware
 - Initiate cloud reporting of all data
 - Document each installation with site notes, photos, and video
 - Work with TAC for approval
- Execute the *Measurement and Verification Plan*, including but not limited to:
 - Begin collecting baseline data from installed data devices
 - Conduct weekly data checks to ensure data integrity
 - Prepare monthly data acquisition integrity reports
 - Update TAC for approval and recommendations
- Generate the *Baseline Data Monitoring Report* for each pilot site at conclusion of Baseline period
 - Develop energy load profiles
 - Assess quality of data
 - Conduct a behavioral and attitudinal baseline survey with customers

Products:

- Baseline Data Monitoring Report (Draft and Final)

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TASK 6: PRODUCT INSTALLATION AND TESS PERFORMANCE MONITORING

The goals of this task are to install TESS units into each site, using the *Baseline and TESS Instrumentation and Installation Plan*. The team will develop an order of installations using the *List of Pilot Deployment Sites* and install and commission the TESS units. Each pilot site will generate a *TESS Data Report*.

The Recipient shall:

- Execute the *Baseline and TESS Instrumentation and Installation Plan*, including but not limited to, for each site:
 - Installation of TESS units
 - Implementation of PCM logic for the PCM controller
 - Installation of TESS enclosure sensors
 - Test installed TESS system
 - Perform Quality Assurance tasks
- Execute the *Measurement and Verification Plan*, including but not limited to, for each site:
 - Begin collecting data with TESS installed from data devices
 - Conduct weekly data checks to ensure data integrity
 - Prepare monthly data acquisition integrity reports
 - Update TAC for approval and recommendations
- Generate the *TESS Data Report*, including but not limited to, for each site:
 - Develop energy load profiles
 - Assess quality of data
 - Conduct a behavioral and attitudinal baseline survey with customers
- Monitor the operation of the TESS using *Controller Logic v 2.0*
 - Update controller logic firmware when enhancements are available

Products:

- TESS Data Monitoring Report (Draft and Final)

TASK 7: DEMONSTRATION SITES ANALYSIS AND PERFORMANCE REVIEW

The goals of this task are to analyze the *Baseline Data Monitoring Report* and *TESS Data Monitoring Report* and calculate performance of TESS installation for each pilot site. The team will prepare a *Pilot Site Case Study Report*, including a performance analysis and compared to metrics established in *Attachment 11, Project Performance Metrics*, according to the *Measurement and Verification Plan*. Results will form the basis for the *Final Report* in Subtask 1.6.

The Recipient shall:

- Execute the *Measurement and Verification Plan*, including but not limited to, for each site:
 - Establish post-retrofit energy usage
 - Identify peak kW avoided over baseline
 - Identify kWh shifted out of peak periods
 - Identify energy consumption (kWh) savings from increased HVAC efficiency
 - Generate utility-grade technical analysis and summary of performance
 - Calculate annual energy and financial benefits of TESS
 - Calibrate energy model to measured data

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- Generate a *Pilot Case Study Report*, including but not limited to, for each site:
 - Summarize project details for pilot site
 - Analyze pre-and post-retrofit measured data
 - Establish peak load reduction and load shifting benefits
 - Validate operational energy savings
 - Calculate financial performance and savings
 - Compare results to Attachment 11, Project Performance Metrics

Products:

- Pilot Site Case Study Report (Draft and Final)

TASK 8: EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete the *Initial Project Benefits Questionnaire*. The *Initial Project Benefits Questionnaire* shall be initially completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the Annual Survey by December 15 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 Surveys
- Final Project Benefits Questionnaire
- Documentation of Project Profile on EnergizeInnovation.fund
- Documentation of Organization Profile on EnergizeInnovation.fund

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TASK 9: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to conduct activities that will accelerate the commercial adoption of the technology being supported under this agreement. Eligible activities include, but are not limited to, the following:

- Scale-up analysis including manufacturing analysis, independent design verification, and process improvement efforts.
- Technology verification testing, or application to a test bed program located in California.
- Legal services or licensing to secure necessary intellectual property to further develop the technology
- Market research, business plan development, and cost-performance modeling.
- Entry into an incubator or accelerator program located in California.

The Recipient Shall:

- Develop and submit a *Technology Transfer Plan (Draft/Final)* that identifies the proposed activities the recipient will conduct to accelerate the successful commercial adoption of the technology.
- Present the *Draft Technology Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Technology Transfer Plan*. This document will identify:
 - TAC comments the recipient proposes to incorporate into the *Final Technology Transfer Plan*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit the *Final Technology Transfer Plan* to the CAM for approval.
- Implement activities identified in *Final Technology Transfer Plan*.
- Develop and submit a *Technology Transfer Summary Report (Draft/Final)* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the *Final Technology Transfer Plan*. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an 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:

- Technology Transfer Plan (Draft/Final)
- Summary of TAC Comments
- Technology Transfer Summary Report (Draft/Final)
- High Quality Digital Photographs

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V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION - RE: STASIS ENERGY GROUP LLC

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-20-037 with Stasis Energy Group LLC for a \$1,634,740 grant to demonstrate its Thermal Energy Storage Systems (TESS) at 10 commercial buildings, with more than half of the demonstration sites located in disadvantaged or low-income communities. The proposed TESS uses a bio-based phase change material which stores energy harvested from the HVAC system during daily cooling operations and releases the energy during the costliest electricity generation periods of the day. In addition, the TESS cloud-connected controller can optimize thermal storage use, manage comfort settings for building occupants, and provide real-time and historical data on installed units; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her 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 May 12, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Patricia Carlos
Secretariat