



# GRANT REQUEST FORM (GRF)

### A) New Agreement # EPC-19-026 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
ERDD	Quenby Lum	43	916-327-1492

C) Recipient's Legal Name	Federal ID Number
Center for Sustainable Energy	33-0936366

D) Title of Project
Developing Lessons Learned, Best Practices Training Materials and Guidebooks for Customer Side of the Meter Storage

### E) Term and Amount

Start Date	End Date	Amount
6/1/2020	3/31/2024	\$ 1,000,000

### F) Business Meeting Information

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

Proposed Business Meeting Date 5/13/2020  Consent  Discussion

Business Meeting Presenter Quenby Lum Time Needed: 5 minutes

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

#### Agenda Item Subject and Description:

CENTER FOR SUSTAINABLE ENERGY. Proposed resolution approving agreement EPC-19-026 with the Center for Sustainable Energy for a \$1,000,000 grant to fund the research and development of an Electronic Energy Storage Guidebook, and adopting staff's determination that this action is exempt from CEQA. The Guidebook will be designed to help local governments and their permitting agencies identify best practices and guidelines for permitting energy storage systems based on technology type, size and application.

### 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)):

Explain why Agreement is not considered a "Project":

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, § 15306

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



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Explain reason why Agreement is exempt under the above section: This project consists of information gathering and analysis based on research and input from paper studies and stakeholder workshops with local governments, Authorities Having Jurisdiction, industry representatives, state agencies, and end-use customers. This project consists of information gathering and analysis based on research and input from paper studies and stakeholder workshops with local governments, Authorities Having Jurisdiction, industry representatives, state agencies, and end-use customers. No construction will be conducted for this project. This falls into the categorical exemption Cal. Code Regs., title 14 Section 15306: Information Collection, because it meets all of the following criteria: 1) Consist of basic data collection, research, experimental management, and resource evaluation activities; and 2) Which do not result in a serious or major disturbance to an environmental resource.

- 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
Guidehouse Inc.	\$ 97,800
U.S. Department of Energy (Pacific Northwest National Laboratory)	\$ 62,000
U.S. Department of Energy (National Renewable Energy Laboratory)	\$ 45,000
California Solar Energy Industries Association, Inc. dba California Solar & Storage Association	\$ 65,000

**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	18-19	301.001F	\$1,000,000
			\$
			\$

R&D Program Area: ESRO: ETSI

TOTAL: \$ 1,000,000

Explanation for "Other" selection



# GRANT REQUEST FORM (GRF)

Reimbursement Contract #:      Federal Agreement #:

### K) Recipient's Contact Information

#### 1. Recipient's Administrator/Officer

Name: James Strange  
Address: 9325 Sky Park Ct Ste 170  
Ste 170  
City, State, Zip: San Diego, CA  
92123-4368  
Phone: 858-633-8557  
E-Mail:  
James.Strange@energycenter.org

#### 2. Recipient's Project Manager

Name: Pierre Bull  
Address: 1111 Broadway  
3rd Floor  
City, State, Zip: Oakland, CA  
94607-4139  
Phone: 510-250-7057  
E-Mail:  
pierre.bull@energycenter.org

### L) Selection Process Used

- Competitive Solicitation      Solicitation #: GFO-18-305
- 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 |

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**Agreement Manager**

\_\_\_\_\_

**Date**

\_\_\_\_\_

**Office Manager**

\_\_\_\_\_

**Date**

\_\_\_\_\_

**Deputy Director**

\_\_\_\_\_

**Date**

**Scope of Work  
Exhibit A  
Center for Sustainable Energy**

**I. TASK ACRONYM/TERM LISTS**

**A. Task List**

<b>Task #</b>	<b>CPR<sup>1</sup></b>	<b>Task Name</b>
1		General Project Tasks
2		Energy Storage Segmentation
3		Energy Storage Guidebook Research and Dissemination
4		Develop Electronic Energy Storage Guidebook
5		Energy Storage Permitting Module Software Development
6		Provide Two Years of Electronic Guidebook Training and Support
7		Maintenance
8		Evaluation of Project Benefits
9		Technology/Knowledge Transfer Activities

**B. Acronym/Term List**

<b>Acronym/Term</b>	<b>Meaning</b>
BTM	Behind the Meter
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
GHG	Greenhouse Gas
SGIP	Self-Generation Incentive Program
TAC	Technical Advisory Committee

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

**A. Purpose of Agreement**

The purpose of this Agreement is to fund the research and development of an Electronic Energy Storage Guidebook (Guidebook) designed to help local governments and their permitting agencies identify best practices and guidelines for permitting energy storage systems based on technology type, size and application. The project will also socialize energy storage permitting best practices among California’s Authority Having Jurisdictions (AHJs) and energy storage market participants through two years of robust technical training on guidebook implementation.

**B. Problem/ Solution Statement**

**Problem**

While behind-the-meter (BTM) energy storage is experiencing rapid technological advancement, cost reductions, and customer adoption through advanced initiatives and programs, energy storage permitting practices in California lack standardized processes among the 500+ local

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<sup>1</sup> 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.

## **Scope of Work Exhibit A Center for Sustainable Energy**

governments responsible for permitting all BTM energy storage systems. This lack of standardization and application of best practices prevents permitting costs and timelines from decreasing further and can even cause significant delay in project deployment.

### **Solution**

The project team will develop a Guidebook with concise, replicable permitting best practices for diverse types of BTM energy storage technologies that AHJs and industry can use to develop standardized, streamlined permitting processes. The best practices will be developed using input gathered from key stakeholders such as permitting officials, energy storage developers, first responders and codes and standards professionals. The best practices will also be integrated into a software module that will use an application program interface (“API”) or other software mechanism(s) that will interface with the Solar Automated Permitting Process (SolarAPP), currently being developed by the National Renewable Energy Laboratory (NREL), to combine energy storage permitting best practices with solar PV permitting. The Guidebook and SolarAPP will significantly advance California’s energy storage permitting practices which will help reduce costs and allow energy storage to provide utility bill reductions, enhance resilience and safety considerations during Public Safety Power Shutoffs (PSPS) events and create reductions in greenhouse gas emissions.

### **C. Goals and Objectives of the Agreement**

#### **Agreement Goals**

The goals of this Agreement are to:

- Identify best practices and lessons learned from relevant stakeholders to inform development of guidelines for permitting energy storage
- Identify key permitting issues and provide a comprehensive set of guidelines that demonstrate how to address those barriers, in the form of a Guidebook
- Build an energy storage permitting software module that will interface with the Solar Automated Permitting Process (SolarAPP), designed to streamline permitting, inspection and interconnection processes and impacts, thereby reducing the time, effort and costs for the increasing market of solar plus storage customers
- Reduce energy storage installation and permitting timelines and costs
- Facilitate the increased adoption of behind-the-meter energy storage

**Ratepayer Benefits:**<sup>2</sup> This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs and increased safety by the following means:

**Greater Reliability:** Greater deployment of BTM energy storage reduces system peak providing resiliency in cases of high energy demand. Within the SGIP’s new equity resiliency incentive budget, AHJs will be required to verify that energy storage systems paired with solar are capable of/configured to operate in islanded mode, providing a challenge to adoption as most permitting officials are unaware of how to safely and properly review and inspect these systems. This guidebook will provide best practices for permitting islanding-capable systems, allowing

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<sup>2</sup> 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](http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF)).

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permitting officials to understand the technical protocols for energy storage paired with solar islanding functionality.

Lower Costs: Establishing standardized permitting procedures throughout the state could significantly reduce the soft costs of energy storage systems. Additionally, AHJs would reduce the time and costs required to conduct site visits and provide permits, producing local jurisdiction savings as well. Some estimates show that soft costs, which make up roughly 15% of the total cost of energy storage systems, can decrease 60% by 2025 if streamlined permitting practices are implemented<sup>3</sup>.

Increased Safety: With the appropriate permitting process of energy storage systems, utility workers can be ensured that in the case of Public Safety Power Shut-offs (PSPS) events or grid outages, power lines are safely de-energized, and no energy storage systems are back-feeding to the grid while they are performing grid upgrades. AHJs will be able to accurately verify that systems are configured properly, provide best practices for fire safety and islanding capability and ensure that no electricity is back-fed to the grid when the grid is down. Safety will also be associated with those vulnerable medical baseline utility customers who will use energy storage as back-up systems in PSPS events and grid outages to ensure vital life sustaining medical equipment continues to run properly.

Technological Advancement and Breakthroughs:<sup>4</sup> The proposed project will result in a replicable, actionable set of guidelines that AHJs can implement and modify to meet local needs. This will be done via a standardized permitting review and approval process created for BTM energy storage systems. These guidelines will then be built into a software module that will interface with the SolarAPP software platform. This will be provided to local governments as a free and simple online permitting tool to help provide instantaneous permitting and innovative inspection service. We will then work with stakeholders throughout the state to disseminate best practices of energy storage permitting and the SolarAPP to ensure maximum adoption.

### **Agreement Objectives**

The objectives of this Agreement are to:

- Conduct research to inform energy storage segmentation to differentiate permitting requirements and procedures for varying storage systems.
- Develop lessons learned and best practices based on input from local governments, AHJs, industry representatives, state agencies and end-use customers.
- Create a Guidebook, through feedback from AHJs and industry participants, that documents and simplifies the patchwork of permitting requirements into one authoritative best practices manual.
- Build upon The Solar Foundation and NREL's SolarAPP by interfacing the Guidebook requirements with the SolarAPP.

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<sup>3</sup> <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/the-new-rules-of-competition-in-energy-storage>

<sup>4</sup> California Public Resources Code, Section 25711.5(a) also requires EPIC-funded projects to lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory and energy goals.

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- Develop a robust training program with qualified trainers to create a common understanding between permitting officials and energy storage developers where technical and process requirements are communicated effectively and efficiently.
- Provide maintenance for the Guidebook to account for operational or technical changes to energy storage technologies over time.

### 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)**. 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**

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- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the Energy Commission'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 or CD-ROM.

The following describes the accepted formats for electronic data and documents provided to the Energy Commission 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.
  - Documents intended for public distribution will be in PDF file format.
  - The Recipient must also provide the native Microsoft file format.
  - 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 Energy Commission'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 Energy Commission staff relevant to the Agreement. The Recipient will bring its

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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;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);
- Permit documentation (subtask 1.8);
- Subcontracts (subtask 1.9); and
- Any other relevant topics.

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

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
  - An updated Project Schedule;
  - Technical products (subtask 1.1);
  - Progress reports and invoices (subtask 1.5);
  - Final Report (subtask 1.6);
  - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
  - Any other relevant topics.
- Provide an *Updated Project Schedule, List of Match Funds, and List of Permits*, 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:**

- Updated Project Schedule (*if applicable*)
- Updated List of Match Funds (*if applicable*)
- Updated List of Permits (*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 Energy Commission 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 Energy Commission 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 Energy Commission.

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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 Energy Commission, 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 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.
- Submit the CPR Report along with any other *Task Products* that correspond to the technical task for which the CPR meeting is required (i.e., if a CPR meeting is required for Task 2, submit the Task 2 products along with the CPR Report).
- 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* and 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)
- Task Products (draft and/or final as specified in the task)

**CAM Products:**

- CPR Agenda
- List of Expected CPR Participants
- Schedule for Providing a Progress Determination
- Progress Determination

**Subtask 1.4 Final Meeting**

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

### The Recipient shall:

- Meet with Energy Commission 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 state-owned equipment.
  - Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
  - The Energy Commission'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 *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

### Products:

- Final Meeting Agreement Summary (*if applicable*)
- Schedule for Completing Agreement Closeout Activities
- All Draft and Final Written 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,

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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 Fund 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. The CAM will review the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the 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 *Style Manual* provided by the CAM. (See Task 1.1 for requirements for draft and final products.)

**Recipient Products:**

- Final Report Outline (draft and final)

**CAM Product:**

- 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, 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)

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- 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)
- Ensure that the document is written in the third person.
- Ensure that the Executive Summary is understandable to the lay public.
  - Briefly summarize the completed work. Succinctly describe the project results and whether or not the project goals were accomplished.
  - Identify which specific ratepayers can benefit from the project results and how they can achieve the benefits.
  - If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
- Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
- Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
- Include a brief description of the project results in the Abstract.
- 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
- Consider incorporating all CAM comments into the Final Report. 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 Final Report 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.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

### **Products:**

- Final Report (draft and final)
- Written Responses to Comments on the Draft 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 Energy Commission 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.

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### 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 Energy Commission 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 Energy Commission awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
  - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
  - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
  - If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

### Products:

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

### Subtask 1.8 Permits

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

### The Recipient shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:

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- A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
- The schedule the Recipient will follow in applying for and obtaining the permits.

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

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

### **Products:**

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

### **Subtask 1.9 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 the 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,

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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.

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

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#### Subtask 1.11 TAC Meetings

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

#### The Recipient shall:

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

#### Products:

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

## 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 ENERGY STORAGE SEGMENTATION

The goal of this task is to research and categorize energy storage technologies into groups based on factors that affect permitting requirements and procedures, such as technology type, size, location, safety certifications or other factors such as design configuration.

#### The Recipient shall:

- Conduct research on commercially-available behind-the-meter (BTM) energy storage technologies, including electrochemical, thermal and mechanical technologies.
  - Research will include segmentation of storage technologies by factors such as typical customers, system sizes, or location of equipment.
  - Research results will be used to present at public workshops to receive feedback from industry stakeholders.
- Facilitate two stakeholder workshops to gather feedback from key stakeholders, including AHJs, storage system developers and installers, electricians and others.
  - Select workshop locations that currently have a high rate of BTM energy storage systems installations and where they are expected to be installed in the near future

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(e.g., Bay Area, Southern California), using data from the Self-Generation Incentive Program (SGIP) to identify existing and future BTM storage locations.

- Publicize workshops widely through partner, trade association and targeted media options to ensure broad workshop participation.
- Facilitation of the workshop will be conducted by two trained analysts to gain information and build consensus on segmentation among stakeholders.
- Develop a consensus-based system that segments BTM energy storage based on factors such as technology type, system size and location, and identify key risks and value for each category.
- Prepare *Energy Storage Segmentation Report* consisting of findings from market research and public workshops.

#### **Products:**

- Energy Storage Segmentation Report

#### **TASK 3 ENERGY STORAGE GUIDEBOOK RESEARCH AND DISSEMINATION**

The goal of this task is to research and identify lessons learned and best practices for inclusion in the Guidebook and consolidate this information into practical formats that will enable efficient transfer of this knowledge to stakeholders.

#### **The Recipient shall:**

- Conduct interviews with local governments, AHJs, appropriate industry representatives, state agencies and end customers on commercially-available BTM energy storage technologies.
  - Use energy storage segments created in the previous task to organize energy storage barriers and best practices.
  - Identify key challenges for permitting and installing BTM energy storage technologies.
  - Develop a consensus on the best practices for overcoming installation challenges for BTM energy storage systems.
- Develop a comprehensive strategy to efficiently disseminate the Guidebook as approved by the Commission Agreement Manager.
- Establish an outreach strategy that targets manufacturers, developers and other end-users of this guidebook to build awareness of the resource and its purpose.
  - Deploy advertising in targeted digital/print publications, social media (e.g., LinkedIn), search engine (e.g., Google Ads)
  - Distribute news releases and pitch media in targeted trade publications to secure coverage of the guidebook's availability and benefits
  - Develop content kits (talking points as well as canned email, social media post and website copy) for partners and interested stakeholders to use on their communication channels to promote the guidebook's availability and benefits
- Prepare *Energy Storage Permitting Lessons Learned and Best Practices Report* which includes information gathered during the interview and industry outreach phase.
  - Best practices and lessons learned will be divided per the segments presented in the Energy Storage Segmentation Report.
- Prepare *Marketing and Dissemination Strategy Report* for approval by Commission Agreement Manager.

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### Products:

- Energy Storage Permitting Lessons Learned and Best Practices Report
- Marketing and Dissemination Strategy Report

### **TASK 4 DEVELOP ELECTRONIC ENERGY STORAGE GUIDEBOOK**

The goal of this task is to develop a Guidebook that includes energy storage permitting best practices and lessons learned for implementation by AHJs and industry.

#### **The Recipient shall:**

- Prepare draft *Guidebook* for stakeholder dissemination.
  - Guidebook will incorporate all lessons learned and compiled in previous task reports.
- Provide draft *Guidebook* and accompanying documents to stakeholders for review and feedback.
  - Document all feedback and edits for incorporation into final *Guidebook*
- Host at least two public vetting workshops at regionally diverse parts of California to discuss the draft *Guidebook*.
  - Location determination will be based on feedback from stakeholders in prior outreach efforts.
  - Provide technical advisory assistance to primary instructors to support broad distribution of outreach materials to AHJs and local agencies.
  - Provide details on marketing and dissemination plan developed in previous task.
  - Request feedback from AHJs how they anticipate usability to ensure adoption.
  - Host *Guidebook* refinement sessions with interested stakeholder engaged in initial vetting workshops.
- Create final *Guidebook* and set of accompanying materials based on industry feedback and vetting workshop.

#### **Product:**

- Electronic Energy Storage Guidebook (draft and final)

### **TASK 5 ENERGY STORAGE PERMITTING MODULE SOFTWARE DEVELOPMENT**

The goal of this task is to build out the energy storage software module that will interface with NREL's solar automated permit processing platform (SolarAPP).

#### **The Recipient shall:**

- Develop a strategy with NREL to interface the energy storage module with the SolarAPP software platform.
- Participate in specific development meetings to familiarize with the existing SolarAPP system architecture and code development from early stages.
- Get access to the SolarAPP code repository and documentation for following up with the internal development of the energy storage module.
- Obtain guidance, recommendations, and best recommended practices from NREL for expanding the software for the energy storage module.
- Develop and test the functionality and interface of the new energy storage module prototype with the SolarAPP.
- Participate in a series of review sessions with NREL to get feedback about the development of the energy storage module.

## Scope of Work Exhibit A Center for Sustainable Energy

- Launch the module in collaboration with NREL.
- Continue ongoing maintenance and future updates of the module.
- Provide documentation and interface guidelines.

### Products:

- Energy storage module that interfaces with NREL's solar automated permit processing platform (SolarAPP)
- Git repository for the code module
- Documentation for the module

Note: By mutual agreement of the Commission and Recipient, statements in the Center for Sustainable Energy's grant application regarding the **integration** of the proposed software module to be developed under this Agreement **into** The Solar Foundation and NREL's SolarAPP are **not incorporated by reference** into this Agreement, as would otherwise be provided under Agreement, Exhibit C, section 2 (Documents Incorporated by Reference), page 1. These statements occur in Center for Sustainable Energy's grant application at Attachment 2, Executive Summary, pages 1 and 2; and Attachment 4, Narrative, pages 2, 3, 5, 7 and 9. A purpose of this exclusion is to clarify the Recipient's and the Recipient's subcontractors' intent and clarify that the Solar Guidebook Software module will work with the SolarAPP instead of combining with the SolarApp at structural, computer code level. According to the Recipient, this technical change will allow the software suites to work together in a more streamlined fashion and ensure greater compatibility. Another purpose of this exclusion is to eliminate potential confusion about the relationship of the Intellectual Property of the new software module about Guidebook requirements to be developed under this Agreement and the Intellectual Property of SolarAPP. Finally, this Scope of Work clarifies that the new software module will be designed to **interface with, rather than integrate into**, SolarAPP. The Scope of Work clarifications are located at pages 2, 3, 4, and under Task 5.

### TASK 6 GUIDEBOOK TRAINING AND SUPPORT

The goal of this task is to provide and facilitate a robust training regimen for at least a two-year period for AHJs and industry stakeholders on how best to implement a standardized energy storage permitting process.

#### The Recipient shall:

- Deploy guidebook outreach strategy to build awareness of the resource and its purpose among stakeholders
- Develop training materials to assist AHJs and other local agencies on Guidebook implementation.
  - Include technical details on BTM energy storage technologies for a broad range of utility customers.
- Provide outreach material to industry stakeholders, such as developers, contractors, manufacturers and end-users.
- To ensure greatest possible reach and engagement, program team will intake feedback from stakeholders on the best and most effective ways to connect with participants, such as a series of live webinars recorded and posted for repurposing.
- Provide technical advisory assistance in establishing primary instructors to support broad distribution of outreach materials to AHJ's and local agencies.

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- Develop a strategy to account for future periodic updates to the Guidebook and accompanying material to avoid outdated information.
- Train AHJs on the SolarAPP and continually refine information contained therein based on user feedback.

### **Products:**

- Training material used for AHJ and industry stakeholder training

### **TASK 7 MAINTENANCE**

The goal of this task is to create a sustainable plan to ensure future updates, past the initial creation and acceptance of the Guidebook, are seamlessly adopted and made and to provide maintenance for a two-year period.

#### **The Recipient shall:**

- Create an update and maintenance strategy and plan to streamline updating and maintenance processes to the guidebook to eliminate or reduce further Energy Commission funding into the Guidebook.
- Prepare *Future Updates and Maintenance Report* within eight months prior to the expiration of the performance period, detailing how future updates and maintenance to the Guidebook and associated documents will be made.

### **Products:**

- Future Updates and Maintenance Report

### **TASK 8 EVALUATION OF PROJECT BENEFITS**

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

#### **The Recipient shall:**

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) *Kick-off Meeting Benefits Questionnaire*; (2) *Mid-term Benefits Questionnaire*; and (3) *Final Meeting Benefits Questionnaire*.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:
  - For Product Development Projects and Project Demonstrations:
    - Published documents, including date, title, and periodical name.
    - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
    - Greenhouse gas and criteria emissions reductions.
    - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
    - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.

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- A discussion of project product downloads from websites, and publications in technical journals.
- A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Additional Information for Product Development Projects:
  - Outcome of product development efforts, such copyrights and license agreements.
  - Units sold or projected to be sold in California and outside of California.
  - Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
  - Investment dollars/follow-on private funding as a result of Energy Commission funding.
  - Patent numbers and applications, along with dates and brief descriptions.
- Additional Information for Product Demonstrations:
  - Outcome of demonstrations and status of technology.
  - Number of similar installations.
  - Jobs created/retained as a result of the Agreement.
- For Information/Tools and Other Research Studies:
  - Outcome of project.
  - Published documents, including date, title, and periodical name.
  - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
  - The number of website downloads.
  - An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
  - An estimate of energy and non-energy benefits.
  - Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
  - A discussion of project product downloads from websites, and publications in technical journals.
  - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Respond to CAM questions regarding responses to the questionnaires.

The Energy Commission may send the Recipient similar questionnaires after the Agreement term ends. Responses to these questionnaires will be voluntary.

**Products:**

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire

**TASK 9 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES**

The goal of this task is to develop a plan to make the knowledge gained, experimental results,

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and lessons learned available to the public and key decision makers.

**The Recipient shall:**

- Prepare an *Initial Fact Sheet* at start of the project that describes the project. Use the format provided by the CAM.
- Prepare a *Final Project Fact Sheet* at the project's conclusion that discusses results. Use the format provided by the CAM.
- Prepare a *Technology/Knowledge Transfer Plan* that includes:
  - An explanation of how the knowledge gained from the project will be made available to the public, including the targeted market sector and potential outreach to end users, utilities, regulatory agencies, and others.
  - A description of the intended use(s) for and users of the project results.
  - Published documents, including date, title, and periodical name.
  - Copies of documents, fact sheets, journal articles, press releases, and other documents prepared for public dissemination. These documents must include the Legal Notice required in the terms and conditions. Indicate where and when the documents were disseminated.
  - A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
  - The number of website downloads or public requests for project results.
  - Additional areas as determined by the CAM.
- Conduct technology transfer activities in accordance with the Technology/Knowledge Transfer Plan. These activities will be reported in the Progress Reports.
- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission.
- 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.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

**Products:**

- Initial Fact Sheet (draft and final)
- Final Project Fact Sheet (draft and final)
- Presentation Materials (draft and final)
- High Quality Digital Photographs
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

**V. PROJECT SCHEDULE**

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES  
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: CENTER FOR SUSTAINABLE ENERGY

**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 EPC-19-026 with the Center for Sustainable Energy for a \$1,000,000 grant to fund the research and development of an Electronic Energy Storage Guidebook. The Guidebook will be designed to help local governments and their permitting agencies identify best practices and guidelines for permitting energy storage systems based on technology type, size and application; 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 Commission 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 13, 2020.

AYE:

NAY:

ABSENT:

ABSTAIN:

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Cody Goldthrite  
Secretariat