STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019) CALIFORNIA ENERGY COMMISSION

A) New Agreement # EPC-19-045 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
ERDD	Robin Goodhand		916-327-1412

C) Recipient's Legal Name	Federal ID Number
GRID Alternatives	26-0043353

D) Title of Project
Critical Resilience for Fire and Emergency Facilities with the Soboba Band of Luiseño Indians

E) Term and Amount

Start Date	End Date	Amount
6/30/2020	3/29/2024	$ 1,710,494

F) Business Meeting Information

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

Proposed Business Meeting Date 7/8/2020 ☐ 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:

GRID ALTERNATIVES. Proposed resolution approving agreement EPC-19-045 with GRID Alternatives for a $1,710,494 grant to demonstrate a solar plus vanadium redox flow battery storage system to provide energy resiliency for the Soboba Band of Luiseño Indians fire station, and adopting staff's determination that this action is exempt from CEQA. The project will validate system performance, such as: long duration energy storage, load shifting, peak shaving, and resiliency during utility power outages. The data obtained on capital cost, operating cost, performance and lessons learned will support commercial deployment. (EPIC funding) Contact: Robin Goodhand (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)):

   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: Pub. Resources Code § 21080.35

   ☒ Categorical Exemption. List CCR section number: Cal. Code Regs., tit. 14, § 15301

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

Explain reason why Agreement is exempt under the above section:

This project will include the installation of a solar PV carport system, within an existing fire station parking lot. The system will enable the generation of energy for on-site use. The PV system installation includes steel carport structures on new concrete pilings and aboveground electrical conduit to connect the system to a microgrid controller. Equipment associated with the PV carport system will not occupy more than 500 square feet of ground surface and will be located on the same parcel as the solar panels. The project does not involve a federal Clean Water Act permit; waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act; an individual take permit for species protected under the federal Endangered Species Act or the California Endangered Species Act; streambed alteration permit pursuant to the California Fish and Game Code; or removal of protected or native plants and trees. For these reasons, the solar PV carport system component of the project is statutorily exempt from CEQA under Public Resources Code, section 21080.35, as installation of a solar energy system at an existing parking lot.

The project will include the installation of a ground mounted VRFB ESS within a fully developed property. The VRFB ESS installation will be a minor alteration to an existing fire station within the interior of the Soboba Reservation with no expansion beyond the existing fire station operation. The project will not have a significant adverse effect on the environment due to unusual circumstances, result in a significant cumulative impact, damage resources within a designated state scenic highway, cause substantial adverse change to the significance of a historical resource, or be located on a listed hazardous waste site. For these reasons, the VRFB ESS component of the project is categorically exempt from CEQA under California Code of Regulations, title 14, section 15301, as a minor alteration of an existing facility, involving no expansion of the existing use.

The project will install and operate a microgrid system consisting of solar PV carport and energy storage systems at the Soboba Fire Station, within the Soboba Indian Reservation. The new microgrid system will reduce the Soboba Community's GHG emissions. The installation of the microgrid system will not result in the expansion of the existing use. Vehicle trips associated with the construction of the project will be temporary and the operation of the microgrid system will result in a negligible number of regular operational trips for maintenance. Motorists using Soboba Road will view the new solar PV carport and VRFB ESS components briefly when passing by the fire station; however, the new components are shorter in height compared to the fire station and are located in close proximity to the existing building. No adverse effects to off-site water or air quality would occur as a result of the proposed project. Therefore, the project falls under the common sense exemption listed in California Code of Regulations, title 14, section 15061(b)(3), as there is no possibility the installation of the microgrid system will have a significant effect on the off-site environment.

The section 15301 and 15061(b)(3) exemptions each serve as an independent basis for finding the project exempt.

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
The Regents of the University of California, on behalf of the Riverside campus	$ 599,646
TBD - Electrical Contractor	$ 24,709
TBD - Fabrication Engineering	$ 5,204
TBD - Geotech	$ 7,807
Soboba Band of Luiseño Indians	$ 9,294
	$
	$
	$
	$
	$

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	$1,710,494
			$
			$
			$
			$
			$

R&D Program Area: ESRO: ETSI TOTAL: $ 1,710,494

Explanation for “Other” selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient’s Contact Information

1. Recipient’s Administrator/Officer

Name: Stan Greschner

Address: 1171 Ocean Ave

City, State, Zip: Oakland, CA 94608-1147

Phone: 510-731-1322

E-Mail: sgreschner@gridalternatives.org

City, State, Zip: Oakland, CA 94608-1147
Phone: 510-338-9546
E-Mail: ddumovich@gridalternatives.org

2. Recipient's Project Manager
Name: Dan Dumovich
Address: 1171 Ocean Ave

L) Selection Process Used

☒ Competitive Solicitation Solicitation #: GFO-19-306
☐ First Come First Served Solicitation Solicitation #:

M) The following items should be attached to this GRF

1.	Exhibit A, Scope of Work		☒ Attached
2.	Exhibit B, Budget Detail		☒ Attached
3.	CEC 105, Questionnaire for Identifying Conflicts		☒ Attached
4.	Recipient Resolution	☐ N/A	☐ Attached
5.	CEQA Documentation	☐ N/A	☒ Attached

_____ _____
Agreement Manager **Date**

_____ _____
Office Manager **Date**

_____ _____
Deputy Director **Date**

Exhibit A
Scope of Work
GRID Alternatives

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2	X	Community Engagement
3	X	Energy Systems
4		Measurement and Verification
5		Evaluation of Project Benefits
6		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BIA	Bureau of Indian Affairs
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEQA	California Environmental Quality Act
CPR	Critical Project Review
DC	Direct Current
DR	Demand Response
GHG	Greenhouse Gas
IOU	Investor Owned Utility
kW	KiloWatt
kWh	KiloWatt hour
M&E	Measurement and Evaluation
PTO	Permission to Operate
SCE	Southern California Edison
TAC	Technical Advisory Committee
VRFB	Vanadium Redox Flow Battery

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

A. Purpose of Agreement

The purpose of this Agreement is to fund long-duration energy storage technology and renewable energy generation to provide cost savings and backup power to the Soboba Band of Luiseño Indians at a community critical facility fire station. The energy systems to be installed in this project will enable the fire station to be resilient during a grid outage and provide critical emergency services and function as an emergency community facility.

[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
GRID Alternatives

B. Problem/ Solution Statement

Problem

The Soboba Band of Luiseño Indians is highly impacted by planned and unplanned public safety power shut offs and grid outages. During an outage, of which there were eight in 2019 alone, the tribe's fire station and emergency response facility is left without power, greatly limiting their ability to respond to the community and provide critical resources and potentially life-saving responses to an emergency or disaster. The Soboba community currently lacks a centralized location for the community to meet and receive services and information during an outage or emergency, leaving many residents vulnerable and isolated.

Solution

The Recipient (GRID Alternatives) will install a long-duration energy storage and renewable generation system to provide energy resiliency for the Soboba fire station. Energy management systems will be incorporated to leverage additional cost savings and value for the community. In parallel with the implementation of the energy systems, the project team will work with the Soboba tribe to develop a community-wide approach for maximizing added value from the project, such as: developing community educational outreach materials and trainee opportunities; as well as coordinating the communities' efforts to enhance their emergency response capabilities.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Demonstrate a solar plus storage system at a critical facility fire station to provide energy resiliency in the event of a grid outage.
- Implement energy management control of the system to reduce customer energy bills and emissions relative to a historical baseline for the fire station.
- Develop, in close coordination with the tribe, culturally appropriate outreach materials.
- Provide the tribal community with opportunities for hands-on job training.
- Coordinate with the communities' efforts to enhance their emergency response capabilities.

Ratepayer Benefits:[2] This Agreement will result in the ratepayer benefits of providing energy resiliency, reliability and lower customer energy bills for a community critical facility fire station. The performance data and lessons learned in this project will serve as an important case study for informing the development of replicable community approaches for implementing energy resiliency in community critical facilities.

[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).

Technological Advancement and Breakthroughs:[3] This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by demonstrating a solar plus energy storage technology and gathering performance data and lessons learned that will inform the development of replicable approaches for establishing energy resiliency in critical facilities such as fire stations within tribal and low-income communities. This project will identify best practice approaches for maximizing added value for the community in parallel with the deployment of the energy systems. This project will serve as an important case study for assessing the value of energy resiliency and will inform the development of business models and implementation strategies in support of achieving California's energy goals.

Agreement Objectives

The objectives of this Agreement are to:

- Demonstrate a solar plus storage system that will provide energy resiliency for a community critical facility fire station. The project will validate that system can provide at least ten hours of energy resiliency for the fire station during three actual or simulated grid outages.
- Reduce customer energy bills / energy consumption relative to a historical baseline.
- In close coordination with the tribe, estimate the community costs and losses associated with historical grid outages to use as a base line for evaluating the value of resiliency for the community. The system performance data and lessons learned will serve as a test case to estimate a dollar value of energy resiliency that will inform the development of business models to support further system deployments.

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.

[3] 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.

- 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 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 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.

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
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, 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)
        - 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.

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:
    - 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, 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 shall include the expertise of each proposed TAC member and the value to the project. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.11.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

Products:

- List of Potential TAC Members

- List of TAC Members
- Documentation of TAC Member Commitment

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

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

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

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

IV. TECHNICAL TASKS

TASK 2 COMMUNITY ENGAGEMENT
The goal of this task is to ensure community involvement and engagement throughout the project, and to ensure that the project adds value to the community.

The Recipient Shall:

- Prepare a *Community Engagement Report* that will summarize initial coordination efforts and community involvement in the project, key findings, and lessons learned, as well as any modifications to the planned project approach in response to the community engagement.
    - Develop a community engagement approach and outreach materials.
    - Evaluate the community's historical experiences with electricity outages, emergencies, disasters and the overall resources and services available to them.
    - Identify the community needs and priorities and tailor the project approach to maximize project value to the community.
    - Evaluate historical energy usage, estimate energy needs and co-develop culturally/socially/contextually relevant metrics (qualitative and quantitative) to use as a base line for project performance comparison.
- Prepare a *Community Involvement Report* that will summarize coordination efforts and community involvement in the development and construction of the project, as well as summarize how the project has evolved to meet the needs identified through community engagement.
    - Develop outreach materials and approaches to ensure ongoing community engagement and involvement with the project.
    - Identify and leverage opportunities for community involvement, such as: workforce development and training, local procurement, direct employment and other activities to maximize added value for the community.
- Prepare a *Community Impact Report* that will summarize community involvement over the course of the project, how the project evolved in response to needs identified through community engagement, community feedback and their perspectives of the impact of the project, project performance comparison relative to qualitative and quantitative project base line metrics; as well as any lessons learned and best practice recommendations.
    - Evaluate the effectiveness of outreach materials and approaches used to solicit community engagement and involvement throughout the project.
    - Estimate, using this project as a case study example, a dollar value for energy resiliency based on a before and after assessment of the impact and value of providing energy resiliency to the community critical facility fire station.
- Prepare *CPR Report #1* in accordance with subtask 1.3.

Products:

- Community Engagement Report (draft and final) (D201 and D202)
- Community Involvement Report (draft and final) (D203 and D204)
- Community Impact Report (draft and final) (D205 and D206)
- CPR Report #1 (Draft and Final) (D131 and D132)

TASK 3 ENERGY SYSTEMS

The goal of this task is to design, procure, install and commission the energy systems.

The Recipient Shall:

- Prepare a *Preliminary System Design Report* outlining the energy system configuration, system size, user interfaces, and special features selected as the basis for design; as well as a summary of the key factors and design choices that lead to the preliminary design(s),

such as design changes resulting from: resiliency needs, cost considerations, operational considerations, utility interconnection requirements and community considerations.
    - Undertake utility interconnection feasibility studies, community needs assessments, preliminary software and hardware planning, system specification work and associated activities as required to develop a preliminary design for the solar plus energy storage system.
- Prepare a *Detailed System Design Report* outlining the construction ready design; as well as a summary of factors that led to design changes (such as: resiliency needs, cost considerations, operational considerations, utility interconnection requirements or community considerations), lessons learned through the design process.
    - Undertake the detailed software, hardware and specification work, and preparatory works as required to develop construction ready final system designs, construction plans and associated documents.
    - Develop and submit utility interconnection application.
- Prepare a *Systems Installation and Commissioning Report* outlining the transition from the solar plus storage system design to system operation at the demonstration site; as well as a summary of any best practices identified, challenges encountered and lessons learned through the demonstration process.
    - Develop processes, plans and quality assurance measures for safety, site preparation, equipment delivery, staging areas, and other preparatory works as required for systems procurement, delivery, installation and commissioning.
    - Procure, install and integrate the energy systems.
        - Recipient must receive CAM written approval prior to procuring equipment and materials for the energy systems.
    - Define and implement the physical data and power connections between individual system components and the site systems.
    - Develop and optimize control algorithms for the energy management systems.
    - Develop user interfaces for system operational controls and solicit customer experience user feedback on the user interface approach.
    - Perform inspections, safety tests, commissioning tests and associated works as required to obtain Final Permission to Operate (PTO) from the Utility.
    - Develop as built drawings and documentation for the system.
    - Develop an operations and maintenance approach for the term of the grant and an enduring approach over the system lifetime.
    - Develop end of system life decommissioning approach.
- Prepare *CPR Report #2* in accordance with subtask 1.3.

Products:

- Preliminary System Design Report (draft and final) (D301 and D302)
- Detailed System Design Report (draft and final) (D303 and D304)
- Systems Installation and Commissioning Report (draft and final) (D305 and D306)
- CPR Report #2 (Draft and Final) (D133 and D134)

TASK 4 MEASUREMENT AND VERIFICATION

The goal of this task is to develop a measurement and verification (M&V) approach to evaluate project performance for comparison against historical baselines, the project specifications

developed in Task 2 and Task 3, and the metrics described in the Agreement Goals and Objectives listed in Part I of this Scope of Work.

The Recipient Shall:

- Prepare a *M&V Plan* that will include the collection and measurement and verification (M&V) of data on the installation over the one year demonstration period. The duration of data collection may be reduced with prior CAM written approval. M&V includes plots of charge/discharge power levels, storage efficiencies, ambient temperatures, and PV output as a function of time. The *M&V Plan* will also detail: the qualitative and quantitative project base line metrics and project goals, system parameters that will be measured to quantitatively evaluate system performance, the indicators and impacts that would be qualitatively assessed; as well as the verification methodology that will be used to validate the results and findings.
    - Develop an approach to track impacts to the tribal community, the electric system and ratepayers of California.
        - Develop an approach to evaluate quantitative benefits such as: electricity savings, pollution reduction, valuation of greater reliability and jobs created.
        - Develop an approach for assessing qualitative impacts and benefits such as educational benefit to the community and effects on quality of life.
        - Collect and analyze project data during outreach and development.
        - Collect and analyze at least 12 months of operational project data within the term of the grant. The duration of data collection may be reduced with prior CAM written approval.
        - Collect three years of performance data after the project term ends.

- Prepare a *M&V Report* that will detail the validated measured system performance, validated qualitative impacts and benefits, data sources, analytical methodologies and verification approaches used and whether the metrics described the Agreement Goals and Objectives listed in Part I of this Scope of Work were met. Costs and benefits will be evaluated from the perspective of the tribal community and utility ratepayers.

Products:

- M&V Plan (draft and final) (D401 and D402)
- M&V Report (draft and final) (D403 and D404)

TASK 5 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.
  - 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 (D501)
- Mid-term Benefits Questionnaire (D502)
- Final Meeting Benefits Questionnaire (D503)

TASK 6 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES
The goal of this task is to develop a plan to make the knowledge gained, experimental results, 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) (D601 and D602)
- Final Project Fact Sheet (draft and final) (D603 and D603)
- Presentation Materials (draft and final) (D605 and D606)
- High Quality Digital Photographs (D607)
- Technology/Knowledge Transfer Plan (draft and final) (D608 and D609)
- Technology/Knowledge Transfer Report (draft and final) (D610 and D611)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

RESOLUTION NO: 20-0708-9c

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: GRID ALTERNATIVES

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-19-045 with GRID Alternatives for a $1,710,494 grant to demonstrate a solar plus vanadium redox flow battery storage system to provide energy resiliency for the Soboba Band of Luiseño Indians fire station. The project will validate system performance, such as: long duration energy storage, load shifting, peak shaving, and resiliency during utility power outages. The data obtained on capital cost, operating cost, performance and lessons learned will support commercial deployment; 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 July 8, 2020.

AYE:
NAY:
ABSENT:
ABSTAIN:

Cody Goldthrite
Secretariat