California Energy Commission
June 22, 2026 Business Meeting
Backup Materials for Cal Poly Humboldt Sponsored Programs Foundation

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Grant Request Form
3. CEQA Memo
4. Scope of Work

CALIFORNIA ENERGY COMMISSION

PROPOSED RESOLUTION: Cal Poly Humboldt Sponsored Programs Foundation

RESOLUTION NO: 26-0622-XX

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 LDS-25-001 with Cal Poly Humboldt Sponsored Programs Foundation for a $15,711,540 grant. This project will support the installation of an LDES System with a co-located solar PV system on the Hoopa Valley Tribe's Reservation; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

APPROVED AND ADOPTED this 22 day of June 2026, by the following vote:

AYE:
NAY:
ABSENT:
ABSTAIN:

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 approved and adopted by affirmative vote of the CEC at a meeting held on June 22, 2026.

Kim Todd
Secretariat

STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

CEC-270 (Revised 01/2026)

GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: LDS-25-001

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Kevin Mallon
3. MS-:None
4. Phone Number: 916-232-9184

C. Recipient's Information

1. Recipient's Legal Name: Cal Poly Humboldt Sponsored Programs Foundation

D. Title of Project

Title of project: Hoopa Valley Critical Facilities Microgrid

E. Term and Amount

1. Start Date: 6/1/2026
2. End Date: 3/31/2030
3. Amount: $15,711,540.00

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 6/22/2026 .
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Kevin Mallon
5. Time Needed for Business Meeting: 5 minutes.
6. The email subscription topic is: Long Duration Energy Storage (LDES).

Project Description:

Cal Poly Humboldt Sponsored Programs Foundation. Proposed resolution approving agreement LDS-25-001 with Cal Poly Humboldt Sponsored Programs Foundation for a $15,711,540 grant, and adopting staff's recommendation that this action is exempt from CEQA. This grant will support the installation of a Long Duration Energy Storage (LDES) System with a co-located solar photovoltaic system on the Hoopa Valley Tribe's Reservation. (LDES funding) Contact: Kevin Mallon

G. California Environmental Quality Act (CEQA) Compliance

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

   If yes, skip to question 2.

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

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

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

a) Agreement **IS** exempt?

Yes

Statutory Exemption?
No

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

PRC section number:

CCR section number: CCR section number 1, CCR section number 2. Or, None

Categorical Exemption?
Yes

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

CCR section number: §15303 Class 3, New Construction or Conversion of Small Structures; §15304, Minor Alterations to Land

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

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

This project is covered by the Common Sense Exemption under 14 CCR 15061 (b) (3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. Additionally, this Microgrid Project is categorically exempt from CEQA under Class 3 and Class 4 exemptions pursuant to CEQA Guidelines Sections 15303—New Construction or Conversion of Small Structures, and 15304—Minor Alterations to Land.

This Microgrid Project is categorically exempt from CEQA under Class 3 and Class 4 exemptions pursuant to CEQA Guidelines Sections 15303—New Construction or Conversion of Small Structures, and 15304—Minor Alterations to Land. The project consists of the installation of a solar photovoltaic (PV) system and associated BESS, including supporting electrical equipment, utility interconnections, and ancillary infrastructure. The project is located within a previously developed site and does not involve expansion of the site boundaries or a change from its industrial land use designation.

The Microgrid Project is an infill project located at the former site of a lumber mill in a mixed-use area of Hoopa, California. The Microgrid Project site covers four parcels of land, APNs 526-081-031, 032, 033, and 034, with each parcel being about 4 acres in size. The project would include approximately 11.25 acres of solar panels mounted on galvanized steel racking bolted to H-pile beams. Each modular VFRB unit would consist of three energy units with one power unit mounted on top of an energy unit.

The Project would have 8 modular units for a total of 24 energy sections and 8 power sections. The LFP BESS would consist of 7 containerized modules. In addition, the project would include an EDG to provide emergency backup for utility outages that exceed 24 hours in duration. Power from each EDG unit would be conveyed underground in joint trenches with power and communications wiring in PVC conduit.

The Microgrid Project qualifies for a Class 3 exemption because it involves the construction and placement of limited numbers of small facilities and structures, including modular solar equipment, battery storage units, and electrical infrastructure designed to serve local utility needs. None of the facilities would be inhabited. The project is consistent with the Class 3 allowance for the “installation of small new equipment and facilities in small structures.” In addition, the trenching between the solar panels and the BESS modules would be covered by a Class 4 Exemption for minor alterations to land.

Federally recognized tribes are sovereign governments; therefore, CEQA does not apply to the proposed activities given tribal jurisdiction on the Reservation. However, the Tribe is in the process of documenting its environmental compliance for this project in a TEE. The TEE shows that key environmental factors have been evaluated and either avoided or mitigated to a less than significant level.

However, off-reservation impacts must still be evaluated under CEQA. These off-reservation impacts would fall under the Common Sense Exemption as described below.

- Compared with the current supply of energy, the proposed Microgrid Project will improve energy resiliency for Tribal facilities and the local electric grid, as well as reduce overall energy demand on the local energy provider and lower fossil fuel usage and greenhouse gas (GHG) emissions. The proposed project does not provide for any physical changes or alterations outside of the Tribal Reservation. Therefore, as designed, construction of the Microgrid Project has no elements that extend off the reservation. Hence, the project will not construct on or alter any off-reservation land, nor will the project cause a substantial adverse change in the significance of a historical resource off the reservation.

- The proposed Microgrid Project, consisting of solar photovoltaic facilities and BESS systems, would result in temporary air emissions associated with construction vehicles. These emissions would be short-term in nature, intermittent, and would cease upon completion of construction activities. Solar PV generation and BESS facilities do not involve combustion processes and therefore do not generate operational emissions of criteria pollutants or toxic air contaminants. Minimal operational emissions would result from infrequent vehicle trips associated with routine inspection, maintenance, and monitoring activities. Over the long term, the Project would provide a beneficial effect on air quality by supporting the generation and storage of renewable energy and reducing reliance on fossil fuel-derived electricity; thereby, contributing to reduced regional emissions of criteria pollutants and greenhouse gases.

Therefore, the Microgrid Project would not have adverse local air quality impacts either on or off the reservation.

- Based on the planning-level hydrologic and groundwater evaluation, construction of the proposed Microgrid facility is not expected to adversely affect surface water or groundwater resources on or off the Reservation. As described previously in the project description section, the project design will trap firewater in a secondary containment system allowing it to be tested before being released into the storm drain system. Thus, contaminated firewater will be prevented from reaching the Trinity River and will not impact off-reservation water resources.

- The surrounding roadway network consists primarily of two-lane rural highways and local roads that accommodate low to moderate traffic volumes typical of the reservation. No existing transportation facilities within the Project vicinity are operating under congested conditions. During construction the project will not require any additional transportation infrastructure since the workforce is small (maximum of 36 construction workers), with construction-related truck traffic averaging three to five trucks per day. Therefore, there is no need to build additional transportation infrastructure either on or off the reservation. As described previously in the project description section, the project will regulate transport of the vanadium electrolyte preventing spills during transport.

- The project will not generate any additional post-construction traffic off the reservation. Once construction is complete, the project would operate largely unattended and would be monitored remotely. Routine operations and maintenance activities would require only occasional site visits by operations or maintenance personnel, resulting in minimal vehicle trips. These trips would occur intermittently and would not substantially increase traffic volumes on SR 96, Marshall Lane, or other local roadways. The Project would not generate ongoing truck traffic during normal operations, and no changes to existing traffic patterns, circulation, or roadway capacity are anticipated. Therefore, the project would not generate additional post construction traffic volumes off-reservation land.

- Impact pile driving during solar installation would generate the highest noise levels, reaching approximately 81 dBA Leq at nearby residences about 230 feet away, with other construction activities reaching approximately 77 dBA Leq. Noise levels generally are reduced by 6 dBA per doubling of the distance. With the reservation boundary about 9 miles north of the Project site via SR 96, and the south boundary about 5.9 miles away, the project would not increase ambient noise levels off the reservation boundary.

- Due to the winding mountainous terrain and roads, the project would not be visible very far from the project, and therefore, would not degrade the visual character or quality of off-reservation views, damage scenic resources within a highway officially designated state scenic highway, nor affect scenic resources

or objects of aesthetic significance.

In addition, the Microgrid Project does not create impacts to any particularly sensitive environment. Outside the reservation, the project does not involve any cumulative impact of successive projects located of the same type in the same place that might be considered significant. Off the reservation it does not involve unusual circumstances that might have a significant effect on the environment. Therefore, it can be seen with certainty that there is no possibility that the proposed project may have a significant effect on the off-reservation environment. Based on all these factors, the proposed Microgrid Project meets the CEQA “common sense” exemption.

However, project parcels were previously identified in connection with the former lumber mill listed pursuant to Government Code §65962.5 (the Cortese List). In March 1986, a Remedial Action Plan of the lumber mill property was prepared for the Department of Health Services. Cleanup was initiated on March 23, 1987, and completed on April 2, 1987. Following completion of the remediation, the applicable regulatory agency issued a No Further Action (NFA) letter confirming that no additional investigation or remediation was required for those parcels. In 2021, a Phase II Environmental Site Assessment (ESA), Targeted Brownfields Assessment (TBA) was prepared for the U.S. Environmental Protection Agency (USEPA). It was followed up in September 2021, with an Analysis of Brownfield Cleanup Alternatives (ABCA). The brownfield cleanup area includes parcels (APNs 526-081-029, 030, and 031). In response to the ABCA, a Site Cleanup Plan was prepared in May 2025. Those three parcels are currently under active remediation being funded by a USEPA Brownfields grant. Contaminated soil is being excavated and put into a placement cell, which is located adjacent to the Microgrid Project on parcel 526-081-031. The Microgrid Project would be located partially on parcel 526-081-031 (avoiding the placement cell and surrounding area with a minimum 20-foot buffer), and on parcels 526-081-032, 033, and 034. No contaminated soil subject to corrective action is located on the Microgrid Project site. Per the TEE, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared to ensure that erosion and soil is retained on the project site during a storm event and ensure that contamination from the brownfield cleanup area does not enter into the project site. Environmental due diligence demonstrates that the project would not exacerbate existing contamination or interfere with remediation activities.

CEQA bars categorical exemptions based on where the project is located, not based on whether contamination exists nearby—provided the project does not cause a significant environmental effect due to that proximity. Therefore, the Microgrid Project is not subject to the hazardous waste site exception under CEQA Guidelines §15300.2(c) and the hazardous waste exception to the use of the above categorical exemptions does not apply to the Microgrid Project.

Since none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and the Microgrid Project will not have a significant effect on the environment, especially on off-reservation lands.

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

No

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

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

H. Is this project considered “Infrastructure”?

No

I. Subcontractors

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

Subcontractor Legal Company Name	CEC Funds	Match Funds
Hoopa Valley Public Utilities District	$ 10,728,838	**$ 0**

J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter “No vendors or sellers to report” and “0” to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
No vendors to report	**$**	**$**

K. Key Partners

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

Key Partner Legal Company Name
No key partners to report

L. Budget Information

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

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
GGRF	23-24	303.201	$ 15,711,540

TOTAL Amount: $ 15,711,540

R&D Program Area: ICMB: ES&I

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #: 101

M. Recipient's Contact Information

3. Recipient's Administrator/Officer

Name: Anthony Johnson

Address: 1 Harpst Street

City, State, Zip: Arcata, CA 95521

Phone: (707) 826-5164

E-Mail: Anthony.Johnson@humboldt.edu

1. Recipient's Project Manager

Name: David Carter

Address: 1 Harpst Street

City, State, Zip: Arcata, CA 95521

Phone: (707) 826-4345

E-Mail: David.Carter@humboldt.edu

N. Selection Process Used

There are three types of selection process. List the one used for this GRF.

Selection Process	Additional Information
Competitive Solicitation #	Not applicable
First Come First Served Solicitation #	Not applicable
Other	This noncompetitive award is authorized under (PRC 25643(d)(2) because the recipient is a foundation established to serve the California State University.

O. Attached Items

1. List all items that should be attached to this GRF by entering “Yes” or “No”.

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	Yes
5	Awardee CEQA Documentation	No

Approved By

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

Agreement Manager: Kevin Mallon

Approval Date: 3/26/2026

Branch Manager: Cody Taylor

Approval Date: 3/26/2026

Director: Jonah Steinbuck delegated to Branch Manager

Approval Date: 3/26/2026

California ENERGY COMMISSION

CALIFORNIA NATURAL RESOURCES AGENCY

MEMORANDUM

TO: Chair Hochschild
Vice Chair Gunda
Commissioners Gallardo, McAllister, & Skinner

FROM: Christina Evola, Assistant Chief Counsel, Transactions Unit
Sonia Reasor, Attorney, Transaction Unit

SUBJECT: CEQA Compliance for Grant Agreement LDS-25-001 with Cal Poly Humboldt Sponsored Programs Foundation

DATE: June 12, 2026

I. Introduction

California Energy Commission (CEC) staff propose grant LDS-25-001 with Cal Poly Humboldt Sponsored Programs Foundation. The California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.; see also CEQA Guidelines, Cal. Code Regs., tit. 14, § 15000 et seq.) requires that state agencies assess and prepare environmental documents disclosing any significant adverse environmental impacts of discretionary project approvals. However, the proposed project lies wholly within the boundaries of the Hoopa Valley Indian Reservation. Federally recognized tribes are sovereign governments; therefore, CEQA does not apply to the proposed activities given tribal jurisdiction on the Reservation. The Tribe has documented its environmental compliance for this project in the Tribal Environmental Evaluation (TEE). CEC staff independently reviewed the facts, including the TEE, and concludes the project will not have any significant off-reservation environmental impacts; therefore, this project is exempt from CEQA under the "common sense" exemption found in Cal. Code Regs., tit. 14, sec. 15061(b)(3).

II. The Project

The Hoopa Valley Tribe has partnered with Schatz Energy Research Center located at Cal Poly Humboldt University to install a demonstration energy storage project known as the Hoopa Valley Tribe Microgrid Project (Project), on the Hoopa Valley Reservation in Hoopa, Humboldt County, California. The grant award would provide 5.2 megawatts (MW) with a storage capacity of 23.6 megawatt hours (MWh) using Vanadium Flow Redox Battery (VFRB) technology and a 3.0 MW (AC rating) solar photovoltaic (PV) system. Separately from the grant award, an 8.4 MW lithium iron phosphate (LFP) battery energy storage system (BESS) with 33.8 MWh of storage capacity would be installed at the microgrid, and provisions have been made for a 5.0 MW Tier 4 emergency diesel generator (EDG) system. The Project is designed to discharge power to the microgrid continuously for at least 24 hours. The Project site is bordered by the Hoopa Valley Transfer Station to the northwest, Marshall Lane (Ln.) to the east and State Route (SR) 96 to the west. It is located on a former lumber mill site, a portion of which is actively undergoing remediation (brownfield site).

Contaminated soil from the lumber mill is being excavated and put into a placement cell that is adjacent to the microgrid project site. No contaminated soil subject to corrective action is located on the Microgrid Project site.

The Project limits of disturbance would be contained within parcels having APNs 526-081-031, 526-081-032, 526-081-033, and 526-081-034. Each parcel is about 4 acres in size. The southern portion of parcel 526-081-031 is being used for the placement cell, while the northern portion is part of the microgrid project. There is a minimum 20-foot buffer area around the placement cell to prevent disturbance by the microgrid construction. Access to the site would be from SR 96 (Trinity River Highway) and from Marshall Ln. The Project would cover about 13 acres.

The proposed Project would be located on land owned by the Hoopa Valley Tribe. It would be connected to the grid via a new underground primary service drop with fiber optic to the existing underground Hoopa 1101 12kV three-phase circuit located within the Marshall Ln. right-of-way, at the eastern edge of the Project site, near the Tsemeta Forest Nursery. This connection to the existing infrastructure would not result in any changes or expansion of the nearest substation, located near the corner of Pine Creek Rd. and SR 96 in the Hoopa Valley.

The Project would include the design, construction, installation, operation, and decommissioning/removal (at the end of the Project) of the following facilities:

- LDES, 5.2 MW, 23.6 MWh
- PV array 3.0 MW (AC rating)
- LFP BESS, 8.4 MW, 33.8 MWh
- EDG, two units, each: 2.5 MW, 9,500-gallon diesel fuel storage in UL 2085 rated tank
- Switchyard with 480V and 12kV switchgears, transformers, disconnects, grounding transformer, inverters, and communications vault
- Medium Voltage Interconnection Switchgear (PCC) with microgrid protection and control system
- Underground 12kV line from switchyard to PCC switchgear
- Underground primary service drop with fiber optic in a joint trench to PCC switchgear

Generally, the VRFB batteries would charge during hours of the day when solar generation is high and California ISO's day-ahead prices are low, and discharge for up to eight hours during the hours of the day when California ISO's day-ahead prices are high. The LFP BESS would be used primarily for regulating the power flow, frequency, and voltage at the Hoopa substation and for providing seamless transitions to islanded state when the substation becomes deenergized. The EDG would only be used for outages that exceed 24 hours in duration and would never operate in parallel with the Hoopa substation.

III. Location on Tribal Land

The Project is located in the community of Hoopa near the Hoopa Valley Transfer Station on the Hoopa Valley Tribe Reservation in northeastern Humboldt County, California.[1] The Reservation lies within an unincorporated area of the county, approximately 23 miles inland from the Pacific coast, in the Trinity River valley surrounded by Six Rivers National Forest lands. The Project site is located within the Agency district of the Hoopa Valley Tribe Reservation adjacent to SR 96 and is accessed directly from local roads within the community, including Marshall Lane, which connects to other community services and residential areas. The reservation boundary is about 9 miles north of the Project site via SR 96, and the south boundary is about 5.9 miles away.

IV. Common Sense Exemption Under CEQA for Any Impacts Outside of Tribal Land

[1] TEE, Section 3, Project Location.

Although the TEE concludes that no off-reservation environmental impacts will occur, the CEC must make its own decision under, and comply with, CEQA. Government Code section 12012.101(b)(2) makes this clear:

> Except as expressly provided in this section, this subdivision does not exempt a city, county, or city and county, or the Department of Transportation, or any state agency or local jurisdiction, from the requirements of the California Environmental Quality Act.

CEQA only applies to projects that have the potential for causing a significant effect on the environment. A significant effect on the environment is defined as a substantial, or a potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." (Pub. Resources Code, § 21068; Cal. Code Regs., tit. 14, § 15382.)

A project is not subject to CEQA if the activity is covered by the common-sense exemption, where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15.061(b)(3)). Off-reservation impacts are exempt under the "common sense" CEQA exemption because, per the NOE, the proposed project will not:

- construct on or alter any off-reservation land;
- impact local air quality;
- use groundwater resources or otherwise impact any off-reservation water resources;
- build additional transportation infrastructure;
- generate additional post construction traffic volumes off-reservation land;
- increase ambient noise levels off the reservation; or
- degrade the visual character or quality of off-reservation views, including those of scenic resources or objects of aesthetic significance.

Compared with the current supply of energy, the proposed Microgrid Project will improve energy resiliency for Tribal facilities and the local electric grid, as well as reduce overall energy demand on the local energy provider and lower fossil fuel usage and greenhouse gas (GHG) emissions. The proposed project does not provide for any physical changes or alterations outside of the Tribal Reservation.

Two aspects of the TEE are pertinent to the staff's determination that the common sense exemption applies.

First, the TEE requires adoption of a Highway Transportation Management Plan (HTMP) to ensure that transport of the vanadium electrolyte would not occur during inclement weather; no more than three flatbed trucks would participate in any one convoy with one convoy per day; each convoy would include a lead guide truck; and vehicles must be licensed by the California Highway Patrol (CHP) and display a California number (or US Department of Transportation number).

Second, because the project will include lithium iron phosphate (LFP) batteries, there is the potential for thermal runaway and for them to catch fire. Thus, the project description calls for hydrants and a water loop system at the BESS facility to give firefighters the option to cool the surrounding BESS units and thus protect them from radiant heat of the unit undergoing thermal runaway. Because the firewater used to cool adjacent units could become contaminated, the TEE also calls for the area around the LFP BESS and inverters to be paved using asphalt, concrete, or other approved impermeable materials, and create a six-inch berm on the perimeter of that pavement to create a secondary containment area for any firewater runoff if water is used for life safety rescue or suppression of propagation during a BESS fire. Before any retained firewater is removed or drained from the area, the TEE calls for tests that will determine the presence of any contaminants at levels that could adversely impact nearby ground or surface waters. If contaminants are present, the firewater would be removed by vacuum truck and sent to a hazardous material disposal facility.

CEC staff have considered prior uses of the common sense exemption for similar tribal microgrid projects. In particular, the LDS-22-003 Paskenta Microgrid-Long Duration Energy Storage project is a relevant comparison. Environmental

analysis for this project considered a 20MWh zinc-bromine flow battery coupled with a co-located 5MW solar array located on a 26.81-acre site on the Paskenta Indian Reservation, located in Tehama County, California.

The CEC concluded that the Paskenta TEE's requirement for wetlands BMPs and a Storm Water Pollution Prevention Plan was sufficient to conclude that it can be seen with certainty that there is no possibility that the proposed project may have a significant effect on the off-reservation environment including to the wetland habitats adjacent to the project site or plant and wildlife species associated with those wetland habitats.

This is analogous to the Hoopa Valley project, as the project description requires the project to adopt a HTMP and mitigate potential impacts from a LFP BESS fire. Additionally, these measures have been incorporated into the CEQA project description and into the grant award's scope of work; this step was not taken on the LDS-22-003 project. Therefore, it can be seen with certainty that there is no possibility that the proposed project may have a significant effect on the off-reservation environment. Based on all these factors, the proposed project meets the CEQA "common sense" exemption.

V. Conclusion

CEC staff propose grant LDS-25-001 with Cal Poly Humboldt Sponsored Programs Foundation. The grant award would deploy a 23.6 MWh flow battery with a co-located 3.0 MW solar array. The project will be located entirely on the Hoopa Valley Indian Reservation. As discussed above, the Tribe's TEE shows that any potential on-reservation environmental impacts, which are not subject to CEQA, have been evaluated and fully avoided or mitigated. The Tribe's TEE also shows the project will not have any off-reservation environmental impacts. CEC staff, to assist the CEC in complying with its CEQA requirements, independently reviewed the facts and concluded that there is no possibility that the project will have any significant off-reservation environmental impacts. Therefore, CEC staff recommend the CEC find this project exempt under the "common sense" CEQA exemption.

Exhibit A
Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2	X	Front-End Engineering Design and Planning
3		Procurement
4	X	Final Engineering, Permitting, and Construction Contracting
5		Construction
6		Testing
7	X	Commissioning
8		Documentation and Training
9	X	Measurement and Verification
10		Evaluation of Project Benefits
11		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AHJ	Authority Having Jurisdiction
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CCI	California Climate Investments[2]
CEC	California Energy Commission
CHIL	Control Hardware In the Loop
CONOPS	Concept of Operations
CPR	Critical Project Review
FDS	Functional Design Specification
GGRF	Greenhouse Gas Reduction Fund
GHG	Greenhouse Gas
HVPUD	Hoopa Valley Public Utilities District
IRS	Internal Revenue Service
ITC	Investment Tax Credit
LDES	Long Duration Energy Storage
MS	Microsoft

[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.

[2] An umbrella term and associated logo developed for the purpose of communication with funding recipients and the general public to identify programs or projects funded in whole or in part by the Greenhouse Gas Reduction Fund (GGRF). For information, visit: www.caclimateinvestments.ca.gov

Acronym/Term	Meaning
MW	Megawatt
MWh	Megawatt-hour
NETA	InterNational Electrical Testing Association
O&M	Operations and Maintenance
PG&E	Pacific Gas & Electric
PV	Photovoltaic
RFP	Request for Proposals
SQL	Structured Query Language
TAC	Technical Advisory Committee
Tribe	Hoopa Valley Tribe

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the installation of a Long Duration Energy Storage (LDES) System with a co-located solar photovoltaic (PV) system on the Hoopa Valley Tribe (Tribe)'s Reservation. The LDES + solar system will be configured to operate as a microgrid to provide backup power to Tribal facilities and which will include 5.2 Megawatts (MW) / 23.6 Megawatt-hours (MWh) of non-lithium-ion LDES and 3 MW of solar photovoltaic power system. When grid conditions are normal, the system will be operated to provide revenue for the Tribe, which will be the owner/operator.

Funding for the LDES program comes from the California Climate Investments (CCI) program. In accordance with the CCI program, this project will facilitate the achievement of greenhouse gas (GHG) emission reductions and further the purposes of AB 32 (AB 32, Nunez, Global Warming Solutions Act of 2006, Chapter 488, 2006), SB 32 (SB 32, Pavley, California Global Warming Solutions Act of 2006, Chapter 249, 2016), and related statutes.

B. Problem/ Solution Statement

Problem

The Hoopa 1101 circuit, which feeds the Tribe's Reservation, is one of the least reliable circuits in Pacific Gas & Electric (PG&E)'s service territory. The Tribe has minimal control over the level of service they are afforded by PG&E and the electricity costs for Tribal members who reside on the Reservation are extremely high, especially when reliability impacts are considered. For example, a regular occurrence is that Tribal members must drive mobile generators to Tribal elders' houses to prevent food spoilage during power outages. Cultural foods are time consuming to hunt, gather, and process and the lack of reliable electricity puts these valuable cultural resources at risk regularly, in addition to causing adverse nutritional impacts and broader hardship. The Hoopa Valley Public Utilities District (HVPUD) provides electricity through the Western Area Power Administration, however, this electricity allocation is limited to

commercial facilities and does not address reliability. The HVPUD would like to expand its electric service offering to improve reliability on the Hoopa Valley Reservation.

Solution

The HVPUD has been working for several years to assemble the project team and design a microgrid to improve electric reliability for Tribal members and others living on the Reservation. The Tribe is interested in LDES technology due to its positive environmental attributes, such as recyclability, longevity, and lack of thermal runaway risk, compared to lithium-based battery energy storage technologies. Solar energy is abundant on the Reservation and can complement a LDES battery installation with dual use-cases of revenue generation and the provision of backup power. This project will result in positive cash flow for the Tribe and improved electrical reliability. This will be the first utility-scale energy system owned and operated by the Tribe and will help them gain experience that could enable further expansion of their electrical service offerings and lower costs for Tribal members over time.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to: Design and build an LDES + Solar microgrid that can be owned and operated by the Tribe in a revenue-positive fashion while increasing resiliency and building human capacity within the Tribe to expand electrical service offerings at the HVPUD.

Agreement Objectives

The objectives of this Agreement are to:

- Complete front-end engineering design and planning activities to ensure that the project can achieve net positive revenue during the operational phase
- Complete final engineering and permitting activities to enable construction of the project
- Procure equipment in to support project completion by the end of 2029 while meeting the domestic content requirements of the Internal Revenue Service (IRS) Section 48E Investment Tax Credit (ITC) rules
- Test all equipment prior to energization to ensure the quality of the integrated hardware and software systems being deployed.
- Commission all equipment and systems after they have been energized to ensure the system operates as designed and expected by the Tribe.
- Document all equipment and software operational and maintenance requirements and provide training to enable HVPUD staff or their designee to safely operate and maintain the microgrid
- Comply with all applicable environmental requirements and relevant codes and standards per finalized permits
- Estimate the project benefits at the beginning and document actual benefits at the end of the project.
- Transfer knowledge gained from the project to interested parties through conference presentations, tours, and other channels.

Exhibit A
Scope of Work

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

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

The Recipient shall:

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

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

For products that require a final version only

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

For all products

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

Instructions for Submitting Electronic Files and Developing Software:

- **Electronic File Format**
  - Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the California Energy Commission's (CEC) software and Microsoft (MS)-operating computing platforms, or with any other format approved by the CAM. Deliver an electronic copy of the full text of any Agreement data and documents in a format specified by the CAM, such as memory stick.

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

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Project management documents will be in MS 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:
  - MS ASP.NET framework (version 3.5 and up). Recommend 4.0.
  - MS 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.
  - Structured Query Language (SQL).
  - MS SQL Server 2008, Stored Procedures. Recommend 2008 R2.
  - MS SQL Reporting Services. Recommend 2008 R2.
  - XML (external interfaces).

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

MEETINGS

Subtask 1.2 Kick-off Meeting

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

The Recipient shall:

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

  The administrative portion of this meeting will include discussion of the following:
  - Terms and conditions of the Agreement;
  - Invoicing and auditing procedures;
  - Administrative products (subtask 1.1);
  - Critical Project Review (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 this meeting will include discussion of the following:

  - The CAM's expectations for accomplishing tasks described in the Scope of Work;
  - An updated Project Schedule;
  - Technical products (subtask 1.1);
  - Progress reports (subtask 1.5);
  - Final Report (subtask 1.6);
  - Technical Advisory Committee (TAC) meetings (subtasks 1.10 and 1.11); and
  - Any other relevant topics.

- Provide *Kick-off Meeting Presentation* to include but not limited to:
  - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
  - Project schedule that identifies milestones
  - List of potential risk factors and hurdles, and mitigation strategy

- Provide an *Updated Project Schedule, Match Funds Status Letter,* and *Permit Status Letter*, as needed to reflect any changes in the documents.

The CAM shall:
- Designate the date and location of this meeting.
- Send the Recipient a *Kick-off Meeting Agenda*.

Recipient Products:
- Kick-off Meeting Presentation
- Updated Project Schedule *(if applicable)*
- Match Funds Status Letter (subtask 1.7) *(if applicable)*
- Permit Status Letter (subtask 1.8) *(if applicable)*

CAM Product:
- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings
The goal of this subtask is to determine if the project should continue to receive CEC funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient and may include the CAO and any other individuals selected by the CAM to provide support to the CEC.

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit.
However, the CAM may schedule additional CPR meetings as necessary. The budget will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the CEC, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

Exhibit A
Scope of Work

The Recipient shall:

- Prepare and submit a *CPR Report* for each CPR meeting that: (1) discusses the progress of the Agreement toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project.
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient's input.
- Send the Recipient a *CPR Agenda* with a list of expected CPR participants in advance of the CPR meeting. If applicable, the agenda will include a discussion of match funding and permits.
- Conduct and make a record of each CPR meeting. Provide the Recipient with a schedule for providing a Progress Determination on continuation of the project.
- Determine whether to continue the project, and if so whether modifications are needed to the tasks, schedule, products, or budget for the remainder of the Agreement. If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Deputy Director of the Energy Research and Development Division.
- Provide the Recipient with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Recipient revise one or more products.

Recipient Products:

- CPR Report(s)

CAM Products:

- CPR Agenda(s)
- Progress Determination

Subtask 1.4 Final Meeting

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

The Recipient shall:

- Meet with CEC staff to present project findings, conclusions, and recommendations. The final meeting must be completed prior to the closeout of this Agreement. This meeting will be attended by the Recipient and the CAM, at a minimum. The final 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 final 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 final meeting will involve a discussion with the CAM and the CAO of the following Agreement closeout items:
        - Disposition of any procured equipment.
        - The CEC's request for specific "generated" data (not already provided in Agreement products).

  - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
  - "Surviving" Agreement provisions such as repayment provisions and confidential products.
  - Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide copies of *All Final Products* on a USB memory stick, organized by the tasks in the Agreement.

Products:
- Final Meeting Agreement Summary *(if applicable)*
- Schedule for Completing Agreement Closeout Activities
- All Final Products

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:
- Submit a monthly *Progress Report* to the CAM. Each progress report must:
  - Summarize the progress made on all Agreement activities as specified in the scope of work for the preceding month, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. See the Progress Report Format Attachment for the recommended specifications.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the "Payment of Funds" section of the terms and conditions, including a financial report on Match Funds and in-state expenditures.

Products:
- Progress Reports
- Invoices

Subtask 1.6 Final Report

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

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission Style Manual, and Final Report Template provided by the CAM with the following considerations:
    - Ensure that the report includes the following items, in the following order:
        - Cover page (**required**)
        - Credits page on the reverse side of cover with legal disclaimer (**required**)
        - Acknowledgements page (optional)
        - Preface (**required**)
        - Abstract, keywords, and citation page (**required**)
        - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
        - Executive summary (**required**)
        - Body of the report/Summary table that includes the following information, but not limited to (**required**):
            - Recipient name;
            - Project description;
            - Project location(s);
            - Census tract;
            - Dates: project selected and completed;
            - Greenhouse Gas Reduction Fund (GGRF) dollars allocated;
            - Leveraged and/or match funds;
            - Estimated/actual total project GHG emission reductions;
            - Estimated/actual energy saved (kWh, therms, or other fuels) for energy efficiency projects;
            - Estimated/actual energy generated (kWh or therm equivalents) for renewable energy projects;
            - Other benefits or results;
            - Other market sectors that can benefit from the project;
            - Benefits to priority populations;
        - References (if applicable)
        - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)

    - Bibliography (if applicable)
    - Appendices (if applicable) (Create a separate volume if very large.)
    - Attachments (if applicable)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments on Draft Final Report* received on the Executive Summary. For each comment received, the Recipient will identify in the summary the following:
    - Comments the Recipient proposes to incorporate.
    - Comments the Recipient does not propose to incorporate and an explanation for why.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, the Recipient must provide a *Written Response to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

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

CAM Product:
- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:
- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter. If match funds were a part of the proposal that led to the CEC awarding this Agreement, then provide in the letter:
    - A list of the match funds that identifies:
        - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.

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

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

Subtask 1.8 Permits
The goal of this subtask is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track. Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement, with the exception of costs incurred by University of California recipients. Permits must be identified and obtained before the Recipient may incur any costs related to the use of the permit(s) for which the Recipient will request reimbursement.

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

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

- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

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

Subtask 1.9 Obtain and Execute Subawards and Agreements with Site Hosts
The goals of this subtask are to: (1) procure and execute subrecipients and site host agreements, as applicable, required to carry out the tasks under this Agreement; and (2) ensure that the subrecipients and site host agreements are consistent with the Agreement terms and conditions and the Recipient's own contracting policies and procedures.

The Recipient shall:
- Execute and manage subawards and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Execute and manage site host agreements and ensure the right to use the project site throughout the term of the Agreement, as applicable. A site host agreement is not required if the Recipient is the site host.
- Notify the CEC in writing immediately, but no later than five calendar days, if there is a reasonable likelihood the project site cannot be acquired or can no longer be used for the project.
- Incorporate this Agreement by reference into each subaward.
- Include any required Energy Commission flow-down provisions in each sub-award, in addition to a statement that the terms of this Agreement will prevail if they conflict with the sub-award terms.
- Submit a *Subaward and Site Letter* to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required.
- If requested by the CAM, submit a draft of each *Subaward* and any *Site Host Agreement* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed *Subaward* and any *Site Host Agreement*.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding subrecipient additions in the terms and conditions).

Products:
- Subaward and Site Letter
- Draft Subawards *(if requested by the CAM)*
- Draft Site Host Agreement *(if requested by the CAM)*
- Final Subawards *(if requested by the CAM)*
- Final Site Host Agreement *(if requested by the CAM)*

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 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 on project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
  - Technical area expertise;
  - Knowledge of market applications; or
  - Linkages between the agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.
- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate, to the extent the TAC members feel is appropriate, on behalf of the project in its effort to build partnerships, governmental support, and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.

The TAC may be composed of qualified professionals spanning the following types of disciplines:

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Public interest market transformation implementers;
- Product developers relevant to the project;
- U.S. Department of Energy research managers, or experts from other federal or state agencies relevant to the project;
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.11.

- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

Products:
- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

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

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 ensure a long-term perspective on decision-making and progress toward the project’s strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Project Case Study Plan.

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

Subtask 1.12 Project Performance Metrics
The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the project performance metrics section of the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
    - TAC comments the Recipient proposes to incorporate into the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
    - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the Recipient met each of the performance metrics in the *Final Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
- Discuss the *Project Performance Metrics Results* at the Final Meeting.

Products:

- TAC Performance Metrics Summary
- Project Performance Metrics Results

Exhibit A
Scope of Work

IV. TECHNICAL TASKS

TASK 2: FRONT-END ENGINEERING DESIGN AND PLANNING

The goal of this task is to finalize front-end-engineering and design and associated planning activities.

The Recipient shall:

- Complete land survey for the project site
- Complete geotechnical report for the project site
- Finalize equipment specifications
- Complete *90% Engineering Plan Set*
- Include in the design measures to collect and dispose of any water used to suppress battery fires at the project site, including but not limited to
    - Paving the area around any lithium-ion energy storage using asphalt, concrete, or other approved impermeable materials; and
    - Constructing a berm on the perimeter of that pavement to create a holding area for any runoff of water used to suppress a lithium battery fire.
- Complete and submit *Concept of Operations (CONOPS) for the Microgrid Protection and Control System*
- Complete and submit interconnection application and develop and execute an *Interconnection System Impact Study*
- Obtain firm pricing from equipment vendors
- Complete *Engineer's Opinion of Probable Costs* for deployment
- Finalize operations and maintenance cost projections over a 30-year operational period
- Determine break-even revenue requirements for cash-positive long-term operations and prepare and submit a *Revenue Projections Memo*
- Negotiate *Offtake Agreement* with Redwood Coast Energy Authority and other potential off-takers, as appropriate
- Finalize project capital stack planning including IRS Section 48E tax credit, as applicable
- Prepare a *CPR Report #1* and participate in CPR Meeting, per subtask 1.3. Report shall also include:
    - Summary of the Concept of Operations
    - Summary of the 90 % Engineering Design
    - Summary of Engineer's Opinion of Probable Costs
    - Summary of Revenue Projections
    - Status on Offtake Agreement
    - Status of Interconnection Submittal

Products:

- 90% Engineering Plan Set
- Concept of Operations (CONOPS) for the Microgrid Protection and Control System
- Interconnection System Impact Study
- Engineer's Opinion of Probable Costs
- Revenue Projections Memo
- Offtake Agreement
- CPR Report #1

Exhibit A
Scope of Work

TASK 3: PROCUREMENT
The goal of this task is to complete procurement of equipment and long lead-time items.

The Recipient shall:
- Develop a *Procurement Plan*
- Develop a detailed *Master List of Equipment and Materials* for the technologies
- Receive written approval of Master List of Equipment and Materials from CAM before placing purchase order for technologies
- Issue purchase orders based on approved Master List of Equipment and Materials
- Prior to delivery of any vanadium electrolyte, prepare and submit a Hazardous Materials Highway Transportation Management Plan that:
    - Ensures that transport of the vanadium electrolyte shall not occur during inclement weather;
    - No more than three flatbed trucks shall participate in any one convoy, not to exceed one convoy per day;
    - Each convoy shall include a lead guide truck; and
    - Vehicles must be licensed by the California Highway Patrol and display a California number (or US Department of Transportation number).
- Confirm and document receipt of the technologies to facility
- Provide a *Procurement Activities Memo* that includes equipment and materials purchase orders

Products:
- Procurement Plan
- Master List of Equipment and Materials
- Hazardous Materials Highway Transportation Management Plan
- Procurement Activities Memo

TASK 4: FINAL ENGINEERING, PERMITTING, AND CONSTRUCTION CONTRACTING
The goals of this task are to complete the final engineering and permitting processes, and secure construction contract(s).

The Recipient shall:
- Develop 100% *Issued-For-Permit Plan Set* with specifications.
- Complete *Functional Design Specification* (FDS) for the Microgrid Protection and Control System
- Program the Microgrid Protection and Control System
- Execute an *Interconnection Agreement*
- Obtain *Building Permit* for the project
- Contract as needed to complete construction and provide *Construction Contracting Memo*
- Obtain approval and provide a *Copy of Notice to Proceed* from the authorities having jurisdiction (AHJ)
- Prepare a CPR Report #2 and participate in CPR Meeting, per subtask 1.3. Report shall also include:
    - Permit Status
    - Interconnection Status
    - Construction Contracting Status

- Protection and Control System Design Status

Products:
- Issued-For-Permit Plan Set
- Function Design Specification (FDS)
- Interconnection Agreement
- Building Permit
- Construction Contracting Memo
- Copy of Notice to Proceed
- CPR Report #2

TASK 5: CONSTRUCTION
The goal of this task is to complete construction according to the approved building permit.

The Recipient shall:
- Manage construction of the project in accordance with applicable permit documents
- Follow best management practices regarding biological resources, including:
  - Presence of a qualified biologist during construction with the authority to halt all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
  - Implementation of a *Worker Environmental Awareness Program*;
  - Adoption of best management practices, including but not limited to:
    - Location restrictions on refueling,
    - A *Stormwater Pollution Prevention Plan*,
    - Control of invasive plant species.
- Document construction activities
- Support third-party construction administrator responsible for compliance with accounting requirements, including IRS Code Section 48E ITC
- Prepare *As-Built Engineering Plans and Specifications*
- Close out project permits and provide *Permit Closeout Documentation*

Products:
- Worker Environmental Awareness Program
- Stormwater Pollution Prevention Plan
- As-built Engineering Plans and Specifications
- Permit Closeout Documentation

TASK 6: TESTING
The goal of this task is to test new equipment and circuits prior to energization.

The Recipient shall:
- Develop an Request for Proposals (RFP) for InterNational Electrical Testing Association (NETA)-certified electrical testing company
- Circulate RFP and obtain bids for NETA-certified contractor
- Coordinate pre-energization Testing Activities
- Prepare a *Pre-Energization Testing Report*
- Provide Pre-Energization Testing results to PG&E as needed for interconnection
- Prepare and provide a *Control-Hardware-In-the-Loop (CHIL) Test Plan*

- Complete CHIL testing of the Microgrid Protection and Control System, and prepare and provide a *CHIL Test Report*
- Prepare and provide an *Islanded Functional Test Plan*
- Complete Islanded Functional Testing and prepare and provide an *Islanded Functional Test Report*

Products:
- Pre-Energization Testing Report
- Control-Hardware-In-the-Loop (CHIL) Test Plan
- CHIL Test Report
- Islanded Functional Test Plan
- Islanded Functional Test Report

TASK 7: COMMISSIONING
The goal of this task is to commission the installed microgrid systems.

The Recipient shall:
- Commission major equipment and systems and prepare and provide *Commissioning Report for Major Equipment and Systems*
- Commission the microgrid protection and control system and prepare and provide *Microgrid Protection and Control System Commissioning Report*
- Prepare for and Complete Pre-Parallel Inspection with PG&E
- Achieve *Authority to Operate Letter* by the AHJ or its representative and provide a copy of approval documentation.
- Prepare a CPR Report #3 and participate in CPR Meeting, per subtask 1.3. Report shall also include:
    - Summary of major equipment commissioning activities
    - Summary of microgrid protection and control system commissioning

Products:
- Commissioning Report for Major Equipment and Systems
- Microgrid Protection and Control System Commissioning Report
- Authority to Operate Letter
- CPR Report #3

TASK 8: DOCUMENTATION AND TRAINING
The goals of this task are to prepare a complete operations and maintenance (O&M) documentation package for the Tribe and to provide O&M training to HVPUD's staff.

The Recipient shall:
- Prepare an O&M Manual for the microgrid protection and control system
- Compile Manufacturer's O&M Manuals for all new equipment
- Organize the following documents into a comprehensive *O&M Documentation Database* for the Tribe:
    - Protection and Control System O&M Manual
    - Manufacturer's O&M Manuals
    - As-Built Engineering Plans and Specifications
    - CONOPS
    - FDS

  - Pre-Energization Testing Report
  - LDES Commissioning Report
  - PV System Commissioning Reports
  - Fully Executed Interconnection Agreement
  - Permission to Operate Letter
- Develop a *Training Plan*
- Deliver Operator Training, including *Recordings of Training Provided*

Products:
- O&M Documentation Database
- Training Plan
- Recordings of Training Provided

TASK 9: MEASUREMENT AND VERIFICATION
The team will measure and verify the performance of the microgrid and LDES technologies and compare to projected performance. The goal of this task is to report the benefits resulting from this project by performing measurement and verification (M&V) of GHG and energy consumption reduction.

The Recipient shall:
- Enter into an agreement with M&V subcontractor per Task 1.9 (if using an outside vendor)
- Coordinate site visits with the M&V subcontractor at the demonstration site(s), if applicable.
- Develop a M&V protocol for ***pre-installation*** measurement (and calculation) of electric, natural gas and/or other fossil fuel consumption, and GHG emissions of the equipment/process/system(s)/sub-system(s) that are to be upgraded and/or replaced and/or modified.
  - Ensure installation of sub-metering equipment and data loggers for pre/post data analysis.
- Prepare and provide a detailed *M&V Plan* for each project demonstration site to include but not be limited to:
  - A description of the monitoring equipment and instrumentation which will be used.
  - A description of the key input parameters and output metrics that will be measured.
  - A description of the M&V protocol, analysis, and collection methods to be employed.
  - A data collection schedule
  - A description of the independent, third-party M&V services to be employed, if applicable.
- Perform three months (or a shorter period as approved in writing by the CAM) of pre-installation measurements (and calculations) based on the M&V protocol for pre-installation.
- Prepare and provide a *Pre-Installation M&V Findings Report* for each demonstration site that includes M&V protocol, pre-install measurements (and calculations), analysis, and results performed in this task.
- Develop M&V protocol for ***post-installation*** measurements (and calculations) of:
  - Electric, natural gas and/or other fossil fuel consumption, and GHG emissions of the equipment/process/system(s)/sub-system(s) that will be upgraded and/or replaced and/or modified. Factors and metrics to be approved by the CAM.

- Perform at least 6 months or two seasons, for seasonal facilities, (or a shorter period as approved in writing by the CAM) of post-installation measurements based on M&V protocol for post-installation.
- Provide a summary of post-installation M&V progress in Progress Report(s) (see subtask 1.5) which shall include but not be limited to:
    - A narrative on operational highlights from the reporting period, including any stoppages in operation and why; and
    - A summary of M&V findings from the reporting period.
- Analyze post-installation electrical, natural gas and/or other fossil fuel consumption, and GHG emissions.
- Prepare and provide a *Post-Installation M&V Findings Report* for each demonstration site that includes M&V protocol, pre- and post-install measurements (and calculations), analysis, and results performed in this task. Results should at a minimum report on the reduction of electricity, natural gas and/or other fossil fuel usage and reductions of GHG emissions that directly result from this project.
- Provide all key assumptions used to estimate and determine energy and GHG reductions (and additions, if applicable).
- 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.
- Report GGRF benefits per the frequency and metrics listed in the terms and conditions and as provided by CARB guidance
- In the event of a lithium battery fire, test any retained fire water for presence of any contaminants at levels that could adversely impact nearby ground or surface water and appropriately dispose of any contaminated water.
- Prepare a *CPR Report #4* in accordance with subtask 1.3.
    - Summary of Post-Installation M&V Findings
    - Summary of GGRF Data and Benefits
- Participate in a CPR Meeting.

Products:

- M&V Plan (*draft and final*)
- Pre-Installation M&V Findings Report (*draft and final*)
- Post-Installation M&V Findings Report(s) (*draft and final*)
- GGRF benefits data and metrics
- CPR Report #4

TASK 10: EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

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

  - Company growth
  - Follow-on funding and awards received
- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the questionnaire drafts.
- Complete and update the project profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Project Profile on EnergizeInnovation.fund*, including the profile link.
- If the Prime Recipient is an Innovation Partner on the project, complete and update the organizational profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Organization Profile on EnergizeInnovation.fund*, including the profile link.

Products:

- Initial Project Benefits Questionnaire
- Annual Survey(s)
- Final Project Benefits Questionnaire
- Documentation of Project Profile on EnergizeInnovation.fund
- Documentation of Organization Profile on EnergizeInnovation.fund

TASK 11: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the technological learning that resulted from the demonstration(s) is captured and disseminated to the range of professions that will be responsible for future deployments of this technology or similar technologies.

The Recipient Shall:

- Develop and submit a *Project Case Study Plan* that outlines how the Recipient will document the planning, construction, commissioning, and operation of the technology or system being demonstrated. The Project Case Study Plan should include:
  - An outline of the objectives, goals, and activities of the case study.
  - The organization that will be conducting the case study and the plan for conducting it.
  - A list of professions and practitioners involved in the technology's deployment.
  - Specific activities the recipient will take to ensure the learning that results from the project is disseminated to those professions and practitioners.
  - Presentations/webinars/training events to disseminate the results of the case study.
- Present the draft *Project Case Study Plan* to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the draft *Project Case Study Plan*. This document will identify:
  - TAC comments the Recipient proposes to incorporate into the final *Project Case Study Plan*.

  - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Submit the final *Project Case Study Plan* to the CAM for approval.
- Execute the final Project Case Study Plan and develop and submit a Project Case Study.
- When directed by the CAM, develop presentation materials for a CEC sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in knowledge sharing event(s) sponsored by the California CEC.
- Provide at least (6) six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.