STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015) CALIFORNIA ENERGY COMMISSION

New Agreement EPC-18-001 (To be completed by CGL Office)

ERDD	Hatice Gecol	43	916-327-2222

Electric Power Research Institute, Inc.	23-7175375

Port Hueneme Navy Server Farm Building Microgrid

	11/1/2018	3/31/2023	$ 4,998,345

☐ ARFVTP agreements under $75K delegated to Executive Director.			
Proposed Business Meeting Date	9/21/2018	☐ Consent	☒ Discussion
Business Meeting Presenter	David Erne	Time Needed:	10 minutes
Please select one list serve. EPIC (Electric Program Investment Charge)			

Agenda Item Subject and Description

ELECTRIC POWER RESEARCH INSTITUTE, INC.. Proposed resolution approving Agreement EPC-18-001 with Electric Power Research Institute, Inc. (EPRI) for a $4,998,345 grant to demonstrate a standardized, high-DER microgrid to support a server farm building at the Naval Surface Warfare Center - Port Hueneme Division near Oxnard, CA. The data obtained on capital cost, operating cost, performance, and lessons learned will support commercial deployment for both military and non-military applications. EPRI is providing $3,502,754 in match funding.
(Electric Program Investment Charge Program funding) Contact: David Erne.

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":
   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:
   ☒ a) Agreement **IS** exempt. (Attach draft NOE)
   ☒ Statutory Exemption. List PRC and/or CCR section number: PRC § 21080.35
   ☒ Categorical Exemption. List CCR section number: Cal. Code Regs., tit 14, § 15303
   ☐ Common Sense Exemption. 14 CCR 15061 (b) (3)
   Explain reason why Agreement is exempt under the above section:
   The project will install, operate, and evaluate a modular microgrid at the Naval Surface Warfare Center-Port Hueneme Division Server Farm Building (PH1388). Microgrid components are two 250 kW 4-hour lithium-ion AC battery modules, microgrid control system, synchronous condenser system, microgrid islanding and resynchronization equipment with an automatic transfer switch, two electric vehicle (EV) charging stations, and adaptive protection relays. There will be three standard ISO containers (each with the dimension of 20ft long, 8ft wide, 8.5ft high). The battery modules will be located in two of the three standard ISO containers. Microgrid control system, synchronous condenser system, adaptive protection relays, and circuit breakers will be located in the third standard ISO container. Electric cabling and circuit breakers will be used to connect adaptive protection relays, EV chargers, and standard ISO container equipment to the building PH1388 transformer and/or the electric bus-bar of the microgrid. These three standard ISO containers will be placed on the abandoned existing parking lot located south-east of the building PH1388. This project meets the categorical exemptions under 14 CCR section 15303. The small new equipment being installed will be within, and appurtenant to existing structures within the Navy facilities. The project will not have a significant effect on the environment.

   The project will also install the following items funded by match funding: a 500kWac carport-mounted solar PV system, which will be built in the existing parking lot located south of the building PH1388, and energy efficiency (EE) upgrades to the PH1388 energy management control system (EMS) for the efficient operation of Heating Ventilation and Air Conditioning (HVAC) system. Electric cabling and circuit breakers will be used to connect the PV system and the battery modules to the building PH1388 transformer and/or the electric bus-bar of the microgrid. The installation of the solar photovoltaic panels on the rooftop and/or parking lot is statutorily exempt under Public Resources Code 21080.35. The installations are on the existing parking lot. The associated equipment with the solar panels takes up less than 500 square feet of ground surface and will be located on the same or immediately adjacent parcel as the solar panels. The installation of the solar panels does not require any of the permits listed in Public Resources Code 21080.35(d). The electricity generated by the solar panels and stored in the battery will reduce to use of existing site backup power diesel generators. Data will then be collected on the operation of the site.

   ☐ b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
   Check all that apply
   ☐ Initial Study ☐ Environmental Impact Report
   ☐ Negative Declaration ☐ Statement of Overriding Considerations
   ☐ Mitigated Negative Declaration

Legal Company Name:	Budget
William J. Steeley Consulting Services LLP	$ 95,000
TBD - Battery Energy Storage	$ 1,299,053
TBD-Microgrid Electrical Equipments	$ 1,745,697
TBD - Property Fire Protection	$ 19,600
Schweitzer Engineering Laboratories, Inc.(Funded by Match Funding)	$ 0
Distributed Utility Associates (Fiunded by Match Funding)	$ 0
	$
	$
	$

STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015) CALIFORNIA ENERGY COMMISSION

Legal Company Name:
Naval Facilities Engineering Command, Engineering and Expeditionary Warfare Center

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	17-18	301.001E	$4,998,345
			$
			$
			$
			$
			$
R&D Program Area: ESRO: ETSI			$4,998,345
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Name:	David Morrison		Name:	Robert B. Schainker	
Address:	942 Corridor Park Blvd		Address:	3420 Hillview Ave	
City, State, Zip:	Knoxville, TN 37932-3723		City, State, Zip:	Palo Alto, CA 94304-1355	
Phone:	865-218-8104 /	Fax: - -	Phone:	/ 650-855-2358	Fax: - -
E-Mail:	dmorriso@epri.com		E-Mail:	rschaink@epri.com	

☒ Competitive Solicitation Solicitation #: GFO-17-302
☐ First Come First Served Solicitation

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

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2	X	Adaptive Microgrid (AM) Design and Permitting
3		Procurement, Construction, Testing, Commissioning, and Training
4	X	Operation, Data Collection and Analysis
5		Business Model Evaluation and Market Replication Assessment
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AM	Adaptive Microgrid
BESS	Battery Energy Storage System
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
DER	Distributed Energy Resources
EE	Energy Efficiency
EPRI	Electric Power Research Institute
FAT	Factory Acceptance Test
GHG	Greenhouse Gas
IOU	Investor Owned Utility
NBVC	Naval Base Ventura County
PH1388	Server Farm Building Number
PV	Photo Voltaic
SCE	Southern California Edison
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The Energy Commission released a competitive solicitation GFO-17-302 Demonstrate Business Case for Advanced Microgrids in Support of California's Energy and GHG Policies to fund technology demonstration and deployment projects with Electric Program Investment Charge (EPIC) funding. These projects would deploy field examples of advanced microgrids within investor owned utility (IOU) service territories and produce business cases for scalable and repeatable standardized commercial-scale microgrid configurations with measurable benefits for end users of the selected market segments. These microgrid projects would also support

[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.

California's energy policies, reduce greenhouse gas (GHG) and attract non-EPIC funding opportunities for future microgrids. In response to GFO-17-302, Electric Power Research Institute (EPRI) ("Recipient") submitted an application, which was proposed for funding in the Energy Commission's Notice of Proposed Awards (NOPA) dated May 8, 2018. The Recipient's application and the NOPA issued are incorporated by reference to this Agreement in their entirety.

The purpose of this Agreement is to demonstrate a standardized, high-DER Adaptive Microgrid (AM)[2] to support the Naval Surface Warfare Center-Port Hueneme Division (NSWC-PHD) server farm building (building number PH1388), which is located within the Naval Base Ventura County (NBVC). The data obtained on capital cost, operating cost, performance and lessons learned will support commercial deployment of AM for both military and non-military applications.

In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient's Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of the Energy Commission's Award, the Commission's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

B. Problem/ Solution Statement

Problem

Historically, microgrids have experienced poor power quality and/or system failures during electrical transition between grid connected and islanding modes due to rapid occurring electric instabilities (e.g. unstable voltage, current, or power waveforms). Many past microgrids cannot recognize and respond to these rapid events. Also, microgrids installed for backup power on military and non-military sites are currently customized according to each site, resulting in a costly and lengthy deployment. This is caused by site specific short-circuit electrical characteristics changing the core design and equipment specification for the max voltage and max current levels of each microgrid. There is a need to demonstrate a standardized microgrid configuration consisting of various distributed energy resources (DER) that is easily adaptable into commercial markets and can provide reliability and resiliency while reducing GHG emissions.

Solution

In order to eliminate or mitigate electric instabilities occurring during microgrid transitioning between grid connected and islanding modes, this project will incorporate a synchronous condenser and adaptive protection relays to a traditionally designed microgrid ("adaptive microgrid", or "AM") and demonstrate the AM at a critical military facility, PH1388, at NBVC. The Project Team's approach is to design the AM first to broaden the electrical short-circuit current conditions that will significantly expand the siting/market deployment envelope of an AM. This project will demonstrate a cost-competitive, standardized, and repeatable microgrid design functioning to provide renewable and reliable power to the site. The AM will also provide the site continuity of power for a maximum of four consecutive hours during islanding modes. This will be achieved through the use of adaptive protection relays, a 500 kW-4hr Lithium-ion (Li-ion) battery energy storage system (BESS), a 200 kilo Volt Ampere Reactive (kVAR)-2 sec synchronous

[2] Adaptive Microgrid is a traditionally designed microgrid that incorporates extra specific internal components to eliminate or mitigate electric instabilities causing poor power quality and/or failures of microgrid equipment during transition from grid connected mode to islanding mode and from islanding mode back to grid-connected mode. The extra specific internal AM components that will be incorporated as part of this Agreement are a synchronous condenser and adaptive protection relays.

condenser, a 500 kW photo voltaic (PV) array (these numerical values are approximate and could be either less or more). The project will also deploy two electric vehicle (EV) charging stations of which one is alternating current (AC) at 110V and one is fast charging, using either AC or Direct Current (DC) at a higher current and/or voltage. Also, this project will include energy efficiency (EE) upgrades to the PH1388 building control system for the Heating Ventilation and Air Conditioning (HVAC) system, which is part of the PH1388 energy management system (EMS). In-depth monitoring, analysis, evaluation, and reporting will also be conducted to provide credible verification for the impact of the AM on the PH1388 electric supply reliability, operating cost metrics, and environmental benefits. Thus, this project will be a stepping stone to commercialize future AMs for military and non-military applications.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to demonstrate how a combination of DER (e.g., EV charging stations, integrated solar PV, BESS and EE) can subsequently reduce on-site energy needs, costs, and carbon footprint of the NSWC-PHD while simultaneously providing a reliable and renewable resource of backup power for maximum of four hours during grid islanding events.

Ratepayer Benefits:[3] This Agreement will result in the ratepayer benefits of:

- Greater Reliability: The AM will allow the site to operate independently from the Southern California Edison (SCE) grid, supply power more efficiently from a localized source, and nullifies the potential detrimental outcomes due to unforeseen power outages. The findings from this project will be leveraged to recommend a standardized design to improve the reliability of future microgrid integration in military and non-military applications.
- Lower Costs: The collective use of installed on-site PV and BESS will significantly reduce the need for SCE grid supplied energy and, in turn, will decrease the resulting cost of energy to the site. Furthermore, replacing the current leased lead-acid BESS with a Li-ion BESS will save the site on leasing fees spent for the current lead-acid BESS.
- Increased Safety: The AM has the potential to increase safety due to improved ability to control and integrate the site's use of renewable power during islanding events. Curtailing the need to run the backup diesel generators will mitigate engine fatigue, failure, and maintenance caused during regular operation.

Technological Advancement and Breakthroughs:[4] 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 providing new methodologies through careful evaluation of emerging technologies in order to standardize a cost-effective, commercially available microgrid design to help reduce California's fossil fuel energy production and GHG emissions. This project will analyze and define the savings and market barriers, and provide new, valuable performance data that will be used to develop a viable market for future AM deployments.

[3] California Public Resources Code, Section 25711.5(a) requires projects funded by the Electric Program Investment Charge (EPIC) to result in ratepayer benefits. The California Public Utilities Commission, which established the EPIC in 2011, defines ratepayer benefits as greater reliability, lower costs, and increased safety (See CPUC "Phase 2" Decision 12-05-037 at page 19, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

[4] 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.

EXHIBIT A
Scope of Work

Agreement Objectives

The objectives of this Agreement are to:

- Identify different configuration constraints in incorporating an integrated set of technologies to make the most cost-effective and superior performing microgrid design.
- Provide improved electric power supply resiliency and reliability under both islanding and non-islanding operating conditions.
- Analyze and apply performance data to demonstrate the AM's ability to enable the PH1388 customer benefits, local grid benefits (e.g. net impacts on the larger grid's load and load shape as provided by the AM) and GHG reductions.
- Understand current barriers and establish new pathways that can address market and technological barriers that hinder early adopters.
- Determine technical and economic feasibility of an innovative new microgrid for deployment at military and non-military server farm sites.
- Create a prototype for a commercialized and repeatable microgrid to be used as a model for future adoption.
- Evaluate the AM business model, assess market potential and develop a plan to promote replication.
- Develop an approach and lessons learned to support replicability at other facilities.
- Conduct an effective technology and knowledge transfer strategy, and
- By meeting the objectives above, demonstrate a business case for military and non-military microgrids that will lead to significant market penetration.

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).** 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 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.
- Presentations will be in Microsoft PowerPoint format, version 2007 or later.

o **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:
  - o Terms and conditions of the Agreement;
  - o Administrative products (subtask 1.1);
  - o CPR meetings (subtask 1.3);
  - o Match fund documentation (subtask 1.7);
  - o 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);
- Kick-off Meeting Benefits Questionnaire (Task 8);
- Technology/knowledge Transfer (Task 9); 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.
- Complete *Kick-off Meeting Benefits Questionnaire* (Task 8).

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)*
- Kick-off Meeting Benefits Questionnaire (Task 8)

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.

EXHIBIT A
Scope of Work

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, if applicable.
    - 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
- Approval 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, phone numbers of potential members, and a summary of relevant experiences and description of potential value added to the project for each potential member. 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.

Products:

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

EXHIBIT A
Scope of Work

IV. TECHNICAL TASKS

TASK 2 ADAPTIVE MICROGRID (AM) DESIGN AND PERMITTING

The goal of this task is to: (1) employ engineering analyses to develop a standardized and repeatable AM final design that will be used to build, install, operate, and evaluate the performance of the AM, and (2) obtain the permits necessary for construction and operation. Once the AM design has been finalized, final "one-line" electrical drawings will be created for NBVC staff to approve and assist in the AM's installation and operation.

The Recipient shall:

- Work with NBVC to determine and document non-confidential portion of all the activities performed under this Task that can be included in submittals and publications of this Agreement.
- Provide *Site Readiness Verification Documents* (e.g. copy of contract, any form of agreement, or memorandum of understanding, as applicable).
- Conduct system design activities and coordinate these activities with the NBVC Host Site Contact.
- Complete AM system engineering design documents including, but not limited to, plans, specifications of AM equipment, components, and configuration, safety, reliability, failure mode & effects, fire protection, emergency response communications backbone, concept of operations document, engineer's opinion of probable cost. Also, this effort will prepare a preliminary design that uses commercial equipment and is tractable and repeatable.
- Inform the CAM in *Monthly Progress Reports* (Subtask 1.5) which design phases are completed and which applicable permits identified in Task 1.8 are ready to be obtained.
- Obtain all required permits and provide *Copies of Permits* to the CAM (consistent with Task 1.8).
- Conduct a cybersecurity assessment and develop *Cybersecurity Plan* that also defines how the cybersecurity will be addressed over the long-term operation of the microgrid**.** The NBVC may require no wireless, no internet access and no communication links to be part of or embedded into the AM. The NBVC may require all "firm-ware" updates to any portion of the AM equipment to be performed via an on-site process using NBVC personnel*.*
- Develop grid integration strategy including interconnection with utility distribution system feeders and distribution operation center.
- Complete SCE Interconnection Application and inform the CAM*.*
- Prepare a *Final AM System Engineering Power Point Presentation* that includes AM configuration and summarizes all the activities under this task including steps taken, lessons learned, and best practices to finalize these activities.
- Organize TAC #1 meeting per Subtask 1.11 to review all activities and submit all products under this task.
- Participate in a CPR #1 meeting (Subtask 1.3) and submit all products under this task.

Products:

- Monthly Progress Reports (Subtask 1.5)
- Site Readiness Verification Documents
- Copies of Permits (Task 1.8)
- Cybersecurity Plan (non-confidential portion, as determined by the NBVC)
- Final AM System Engineering Power Point Presentation
- TAC #1 meeting agenda, back-up materials, and summary (Subtask 1.11)
- CPR #1 recipient products (Subtask 1.3) and CPR #1 Meeting Summaries

EXHIBIT A
Scope of Work

TASK 3 PROCUREMENT, CONSTRUCTION, TESTING, COMMISSIONING, AND TRAINING

The goal of this task is to: (1) procure equipment and construction services, (2) perform Factory Acceptance Test (FAT) on AM required equipment and components before shipment of equipment to the NBVC PH1388 AM site, (3) construct, test, and commission the various AM components, (4) commission entire AM as an operating system, and (5) develop operation and maintenance manual and train responsible personnel.

The Recipient shall:

- Work with NBVC to determine and document non-confidential portion of all the activities performed under this Task that can be included in submittals and publications of this Agreement.
- Obtain quotes for
  - AM equipment including battery system, control system, adaptive protection relays, switchgear, circuit breakers, synchronous condenser and appurtenances per task 2 design documents, and
  - construction and configuration services.
- Issue, negotiate, and sign contracts for equipment and services.
- Inspect the equipment manufacturing activity (if allowed) to review manufacturing progress and inspect manufacturer quality control inspection papers during the manufacturing process.
- Prepare FAT criteria for the AM's battery system composed of two, approximately 250 kW – 4-hour battery modules, and the AM's controls system, adaptive protection relays, circuit breakers, switchgear, synchronous condenser, and cabling.
- Carry out FAT on equipment before each is allowed to be shipped to the NBVC site, review FAT results, and inform manufacturer of any equipment built by them that did not pass the agreed upon FAT in their contract. Then, for each piece of equipment that did not pass its FAT criteria, require that contractor repeat the manufacturing process for the equipment and repeat the FAT process until the equipment under review does pass its FAT criteria.
- Prepare a *Procurement Lessons Learned Summary*, a document serving as a template or repository for lessons learned during procurement that can assist in AM deployments at other military and non-military facilities.
- Develop communication and control protocols for interfacing all AM subsystems and produce *an AM System Interfacing Power Point Presentation* which will describe each interface in AM and how the AM controller coordinates all subsystems of the AM and emergency response communications.
- Prepare installation, construction and commissioning criteria, and acceptance tests which will be agreed to between the Recipient and each subcontractor and vendor to the Recipient.
- Carry out the installation and construction.
- Provide CAM *Pictures of Installed AM Equipment* with name plate capacities .
- Prepare an *AM Commissioning Plan* that outlines in detail the acceptance testing that will be conducted during system commissioning to validate operational performance.
- Carry out commissioning process and the agreed acceptance testing, repeat acceptance test until it is certified to be passed, and document *On-Site Acceptance and Commissioning Test Results*.
- Perform safety and cybersecurity testing and report *Non-Confidential Safety and Cybersecurity Tests Results*.
- Prepare *a Construction, Commissioning and Testing Lessons Learned Summary*, a document serving as a template or repository for lessons learned during construction

and commissioning that can assist in AM deployments at military and non-military facilities.
- Obtain full system interconnection approval in compliance with Rule 21 and inform the CAM.
- Obtain permission to operate from NBVC and SCE and inform the CAM.
- Develop an emergency response plan for an extended power outage.
- Develop an AM System Documentation Package outlining system operation and troubleshooting procedures.
- Conduct operations and maintenance training for responsible personnel.
- Inform the CAM in *Monthly Progress Reports (*Subtask 1.5) on all activities performed under this task.
- Prepare a *Final Procurement, Construction, Testing, Commissioning, and Training PowerPoint Presentation* that summarizes all the activities under this task including steps taken, lessons learned, and best practices to finalize these activities.

Products:
- Updated Monthly Progress Reports (Subtask 1.5)
- Procurement Lessons Learned Summary
- AM System Interfacing Power Point Presentation
- Pictures of Installed AM Equipment (to be included in Monthly Progress Report)
- AM Commissioning Plan
- On-Site Acceptance and Commissioning Test Results
- Non-confidential Safety and Cybersecurity Tests Results
- Construction, Testing, and Commissioning Lessons Learned Summary
- Final Procurement, Construction, Testing, Commissioning and Training PowerPoint Presentation

TASK 4 OPERATION, DATA COLLECTION, AND ANALYSIS

The goal of this task is to monitor the operation of AM for at least one (1) year and assess its performance, including obtaining data to determine the widest envelop of electrical, PV and battery conditions that the AM can successfully operate in where in-rush short-circuit conditions are at levels which will be mitigated by the performance of the AM's synchronous condenser. Thus, some tests will be run with the synchronous condenser off and some with the synchronous condenser on. In addition, systems will be put in place to allow for the continued monitoring and reporting of system performance over the subsequent three years after this contractual agreement has ended.

The Recipient shall:
- Work with NBVC to determine and document non-confidential portion of all the activities performed under this Task that can be included in submittals and publications of this Agreement.
- Prepare a *Data Collection Plan* to document technical, environmental and economic data for each DER element and entire AM that includes, but is not limited to:
  - Description of the systems to be tested
  - Justification for the tests
  - Parameters that will measure and document successes, lessons learned, and best practices
  - Description of the data collection methodology, including, but not limited to:
    - Data collection protocols

        - Data collection schedule
    - Information storage and retention plan
    - Installation issues
    - Operational constraints and performance
    - Field demonstration of islanded operations, including, but is not limited to:
        - Duration of simulated islanded operation
        - Environmental conditions
        - Target operational loads
    - Response to grid emergencies.
    - A Measurement and Verification Plan that includes, but is not limited to:
        - EE to measure before and after EE for the quantification of actual kW/kWh saved.
        - Demand Response (DR) including, but is not limited to:
            - kW/kWh provided when DR is used
            - Definition of how the DR is used; the services provided by the AM; and the proposed value provided for these AM load services
            - The values of integrated services and how the services can be verified, measured and valued
            - DR event performance information from the IOU and/or CAISO for any DR services provided
- Operate the AM system and collect and analyze data in accordance with the Data Collection Plan at commissioning, monthly thereafter for the one (1) year operation period (or a lesser term with prior CAM written approval), and immediately and after any islanding events.
- Provide *Monthly Data Analysis Reports* to the CAM on field data collected.
- Prepare a *Final AM Performance Report* that includes, but is not limited to:
    - Documentation of data collected
    - Identification of any challenges or barriers encountered and solutions developed to respond to challenges or barriers
    - Documentation and assessment of installation issues, operational constraints, and operational performance, including but is not limited to, the number of hours the AM can operate independently off the grid and respond to grid emergencies.
- Work with both the Energy Commission and the AM operator to negotiate the delivery of the following to the Energy Commission annually for 3 years beyond the term end date of this Agreement:
    - A confirmation that the AM system is operating
    - Any available summary performance data, benefits, or other relevant summary data reports that can be easily provided based on the data collecting systems installed.
- Organize TAC #2 meeting per Subtask 1.11 to review all activities and submit all products under this task.
- Participate in a CPR #2 meeting (Subtask 1.3) and submit all products under this task.

Product:

- Data Collection Plan (draft and final)
- Monthly Data Analysis Reports
- Final AM Performance Report
- TAC #2 meeting agenda, back-up materials, and summary (Subtask 1.11)
- CPR #2 recipient products (Subtask 1.3) and CPR #2 Meeting Summaries

EXHIBIT A
Scope of Work

TASK 5 BUSINESS MODEL EVALUATION AND MARKET REPLICATION ASSESSMENT
The goals of this task are to: 1) evaluate the AM business model being demonstrated, 2) assess the market potential for this business model, and 3) develop a plan to promote market replication.

The Recipient shall:

- Prepare a *AM Business Model Evaluation Report* that includes, but is not limited to:
  - Develop a business model that describes the non-confidential financial and business arrangements associated with the AM deployed at the NBVC.
  - Evaluate the viability of the AM business model and identify and assess alternative configurations as appropriate.
  - Identify potential revenue streams and ways to quantify benefits.
  - Conduct a cost benefit analysis for the AM Project.
- Prepare an *AM Market Evaluation Report* that includes, but is not limited to*:*
  - Assess the market potential for the AM model.
  - Identify relevant stakeholders.
  - Conduct stakeholder engagement.
  - Identify potential costs and benefits to each stakeholder group and assess pay back periods.
  - Assess California and non-California market potential by key segments.
  - Estimate adoption projection scenarios for key market segments.
  - Identify primary barriers to adoption.
- Prepare an *AM Market Replication Plan* that includes, but is not limited to:
  - Develop promotional materials:
    - Best practices guide for military and non-military interested in AM
    - Financing solutions and procurement strategies
    - Energy assurance planning opportunities
    - Market pathways, revenue generation from stacked benefits
    - Technology options
    - Utility products, tariffs, services
  - Identify existing and emerging market outreach channels.
  - Develop market communication schedule for team members during project period.
  - Establish market replication plan success metrics.
  - Document results.

Product:

- AM Business Model Evaluation Report
- AM Market Evaluation Report
- AM Market Replication Plan

TASK 6 EVALUATION OF PROJECT BENEFITS (Mandatory task)
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, but is not limited to:

- For Advanced Microgrid Business Case Demonstrations:
  - Reliability, resiliency and sustainability improvements as provided by the microgrid.
  - Net impacts on the larger grid's load and load shape as provided by the microgrid.
  - GHG reductions as provided by the microgrid, compared to using the utility grid for the electricity and also GHG reductions as provided by any new EE capabilities of the microgrid project.
  - The dollar value of energy savings as provided by the microgrid, each year.
  - The dollar value of any co-benefits that may accrue to the project, each year.
  - Cost savings or increments compared to business as usual, as provided by the microgrid, including but not limited to technology and installation costs, operations and maintenance, and energy use.
  - Benefit metrics for each of the different DER separated by the specific DER element (e.g., the value energy storage provides to the microgrid owner/operator, the value renewables provide to the microgrid owner/operator, the value demand response services provide to the microgrid owner/operator).
  - Benefit of services as provided by the microgrid to the utility grid.

- 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.
  - GHG 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
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire

TASK 7 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:
- Work with NBVC to determine and document non-confidential portion of all the activities performed under this Task that can be included in submittals and publications of this Agreement.
- Submit a monthly *Updated Progress Power Point Slide* that will be used by CAM for Energy Commission knowledge transfer activities (template supplied by CAM).
- Arrange CAM site visits for the CAM to observe project progress and verify installations as requested by the CAM and prepare *CAM Site Visits Schedules*
- 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 meetings/conference/workshop(s) on the project. Presentation materials must be approved by the CAM in writing prior to the conference/workshop(s).
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission and develop *Presentation Materials*. Presentation materials must be approved by the CAM in writing prior to the symposium(s).
- 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:

- Updated Progress Power Point Slide
- CAM Site Visit Schedules
- Initial Fact Sheet (draft and final)
- Final Project Fact Sheet (draft and final)
- Presentation Materials (draft and final)
- High Quality Digital Photographs
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

RESOLUTION NO: 18-0921-9

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: ELECTRIC POWER RESEARCH INSTITUTE, INC..

RESOLVED, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the Energy Commission approves Agreement EPC-18-001 with Electric Power Research Institute, Inc. (EPRI) for a $4,998,345 grant to demonstrate a standardized, high-DER microgrid to support a server farm building at the Naval Surface Warfare Center-Port Hueneme Division near Oxnard, CA. The data obtained on capital cost, operating cost, performance, and lessons learned will support commercial deployment for both military and non-military applications. EPRI is providing $3,502,754 in match funding; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on September 21, 2018.

AYE: [List of Commissioners]
NAY: [List of Commissioners]
ABSENT: [List of Commissioners]
ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat