STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13) CALIFORNIA ENERGY COMMISSION

New Agreement EPC-14-083 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
ERDD	Michael Sokol	43	916-327-1416

Recipient's Legal Name	Federal ID Number
Prospect Silicon Valley dba Bay Area Climate Collaborative (BACC)	27-0220018

Title of Project
College of San Mateo Internet of Energy

Term and Amount	Start Date	End Date	Amount
	6/29/2015	9/30/2018	$ 2,999,601

Business Meeting Information			
☐ ARFVTP agreements under $75K delegated to Executive Director.			
Proposed Business Meeting Date	5/27/2015	☐ Consent	☒ Discussion
Business Meeting Presenter	Michael Sokol	Time Needed:	5 minutes
Please select one list serve. EPIC (Electric Program Investment Charge)			

Agenda Item Subject and Description

PROSPECT SILICON VALLEY DBA BAY AREA CLIMATE COLLABORATIVE (BACC). Proposed resolution approving Agreement EPC-14-083 with Prospect Silicon Valley dba Bay Area Climate Collaborative (BACC) for a $2,999,601 grant to demonstrate integrated solar photovoltaic, energy storage, and advanced power electronics within a single module to reduce community energy load variability.

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:
   ☒ Categorical Exemption. List CCR section number: 14 CCR 15301, 15303, 15304, & 15314
   ☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

   Explain reason why Agreement is exempt under the above section:
   This project involves upgrading and expanding existing energy infrastructure, including local distribution lines, transformers, and other electrical equipment, to demonstrate a small-scale, 200 kilowatt, experimental photovoltaic array integrated with 200 kilowatt-hour energy storage system within an existing school campus. The photovoltaic panels will be mounted on pedestals over an existing parking lot. The project will also install a traditional 200 kilowatt photovoltaic array and 200 kilowatt hours of standalone battery energy storage to evaluate performance improvements of the integrated system. The project will have a negligible impact on local traffic patterns, local utilities, and the environment.

   Cal. Code Regs., tit. 14, sect. 15301 provides that projects which consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use beyond that existing at the time of the lead agency's determination, are categorically exempt from the provisions of the California Environmental Quality Act. The project involves installation of an advanced solar PV system integrated with electrical energy storage, standalone photovoltaic and energy storage systems, and associated electrical equipment at an existing lot, for the purposes of evaluating performance of the integrated system and optimizing energy efficiency upgrades and advanced controls and communication features to maximize energy efficiency. This use does not significantly alter the intent or use of the existing school campus. For these reasons, the proposed project falls under section 15301.

   Cal. Code Regs., tit. 14, sect. 15303 provides that projects which consist of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure, are categorically exempt from the provisions of the California Environmental Quality Act. This project will add small structures and features to an existing lot on the college campus to accommodate approximately 400 kilowatts of solar PV and 400 kilowatt-hours of electrical energy storage, for the purpose of onsite energy production. For these reasons, the project falls within section 15303.

   Cal. Code Regs., tit. 14, sect. 15304 states that projects which cause minor alterations in the condition of the land, and that do not involve removal of healthy, mature, scenic trees except for forestry and agricultural purposes, are categorically exempt from the provisions of the California Environmental Quality Act. The site preparation involved in this proposed project will involve grading on a slope less than 10 percent, and minor trenching and backfilling to install electrical cable, with surface restoration. No healthy, mature, scenic trees will be removed by the project. For these reasons, the project falls within section 15304.

   Cal. Code Regs., tit. 14, sect. 15314 states that minor additions to existing schools within existing school grounds where the addition does not increase original student capacity by more than 25% or ten classrooms, whichever is less, are categorically exempt from the California Environmental Quality Act. This project will involve minor additions to an existing community college campus, and it is not expected to increase student capacity to any degree. For these reasons, the project falls within section 15314.

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

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

Legal Company Name:	Budget
See Attached	$
	$
	$
	$
	$
	$
	$
	$
	$

STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13) CALIFORNIA ENERGY COMMISSION

List all key partners: (attach additional sheets as necessary)
Legal Company Name:
Prospect Sillicon Valley dba Bay Area Climate Collaborative (BACC)

Budget Information			
Funding Source	**Funding Year of Appropriation**	**Budget List No.**	**Amount**
EPIC	13-14	301.001A	$2,999,601
			$
			$
			$
			$
			$
R&D Program Area: EGRO: Renewables		TOTAL:	$2,999,601
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				**Recipient's Project Manager**			
Name:	Rafael Reyes			Name:	Rafael Reyes		
Address:	1608 LAS PLUMAS AVE			Address:	1608 LAS PLUMAS AVE		
City, State, Zip:	SAN JOSE, CA 95133-1655			City, State, Zip:	SAN JOSE, CA 95133-1655		
Phone:	408-409-5534 /	Fax:	- -	Phone:	408-409-5534 /	Fax:	- -
E-Mail:	rreyes@baclimate.org			E-Mail:	rreyes@baclimate.org		

Selection Process Used
☒ Competitive Solicitation Solicitation #: PON-14-307
☐ First Come First Served Solicitation

The following items should be attached to this GRF		
1. Exhibit A, Scope of Work		☒ Attached
2. Exhibit B, Budget Detail		☒ Attached
3. CEC 105, Questionnaire for Identifying Conflicts		☒ Attached
4. Recipient Resolution	☒ N/A	☐ Attached
5. CEQA Documentation	☐ N/A	☒ Attached

Agreement Manager	Date	Office Manager	Date	Deputy Director	Date

Subcontractors

1. Sun Edison

   $2,340,000 CEC
   $1,595,000 Match

2. Growing Energy Labs, Inc

   $139,650 CEC
   $32,000 Match

3. San Mateo County Community College District

   $415,040 CEC
   $688,960 Match

EXHIBIT A
Scope of Work

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2	X	System Design and Testing
3	X	System Deployment
4		Efficiency and Educational Enhancements
5		Data Collection and Reporting
6		Evaluation of Project Benefits
7		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AC	Alternating Current
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
CSM	College of San Mateo
DC	Direct Current
EMS	Energy Management System
HVAC	Heating, Ventilating, and Air Conditioning
IoEn	Internet of Energy
ISO	Independent System Operator
PVS	Photovoltaic Storage Module
Recipient	Prospect Silicon Valley dba Bay Area Climate Collaborative
SMCCCD	San Mateo County Community College District
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the demonstration of an advanced integrated solar, storage and demand management network. This project will demonstrate next-generation multi-asset networked, addressable, and dispatchable community grid control services which will enable greater capture of solar energy, shift energy availability to match demand, smooth the demand profile from a utility and reduce costs. Collectively these strategies will provide for greater grid penetration of distributed renewables and increase grid stability.

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

EXHIBIT A
Scope of Work

B. Problem/ Solution Statement

Problem

Renewables generation and demand profiles challenge grid power reliability and stability due to a range of variability mismatch issues. These issues include significant short term rapid fluctuation variability affecting power quality as well as daily and seasonal variability creating potentially significant rapid load ramps (known as the “duck curve”).

California’s renewable energy programs have increased the need for flexible ramping capacity and smoothing of demand profiles, aka, flattening the “duck curve” of solar generation. Battery energy storage is a key solution which complements distributed variable renewables, providing fast, clean and reliable smoothing of community generation profiles through dispatchable load-following power. However, current technologies are not cost-competitive with conventional generation sources and have limited adoption putting grid stability at possible risk. On the other hand, broad adoption of conventional storage strategies may result in significant ratepayer cost impacts.

Solution

The solution is to enhance demand side management and generation to reduce community energy load variability. Such a solution should include load shifting through both curtailing direct demand such as non-critical load reduction, time-shifting loads such as “pre-cooling” buildings, as well as net-grid load shifting through local energy storage which draws power during non-peak periods and release during peak periods. In addition, the solution should include enhancing distributed generation to both reduce generation variability and better align generation to the demand profile.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

1. Develop and demonstrate a pre-commercial photovoltaic-storage system (PVS) with array-integrated direct current (DC) to DC storage for improved generation efficiency of as much as 13%.
2. Demonstrate an innovative integrated Internet of Energy (IoEn) solution for distributed generation and demand-side management that will significantly reduce demand-side variability on the grid by as much as 10%.
3. Leverage the installation for workforce and stakeholder education.

EXHIBIT A
Scope of Work

Ratepayer Benefits:[2] This Agreement will result in the ratepayer benefits of greater electricity reliability and lower costs by providing new distributed renewable technology that will increase generation yield and result in greater grid stability, at lower cost to ratepayers.

The PVS module in this project is array-integrated which will reduce hardware costs, installation costs, and capture significantly more solar energy than a traditional solar module. Coupled with an advanced multi-asset dispatchable energy intelligence which provides demand management, and coordination of generation and storage, the system benefits can be maximized for communities, utilities, independent system operators (ISOs) and rate payers, reducing the need for expensive utility scale rapid dispatchable generation and storage. These benefits will ultimately yield cleaner energy, greater grid stability and lower costs for rate payers.

Technological Advancement and Breakthroughs:[3] This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by advancing state-of-the-art distributed solar architecture and integrated community energy services.

Current distributed PV technology does not provide for load-following generation and, frequently, PV systems are oversized to maximize total generation at the expense of peak period efficiency. The PVS system will advance the state-of-the-art for solar generation by integrating energy storage and power electronics with PV modules to allow wider generation times and capture clipped energy lost by traditional PV system design. Designed for direct DC transfer of energy (without conventional DC to Alternating Current (AC) to DC conversions), the PVS system is projected to produce as much as 13% more energy over a conventional PV system in addition to 10 to 15% less power loss at an installed cost of 10% less than a conventional PV system with fixed storage. The architecture will integrate sophisticated control algorithms to manage the power flows from the PV module and the battery stack to the AC bus, mitigate the variability in production from the module due to variable irradiance, and reduce demand charges through sophisticated management of critical AC loads using efficiency algorithms.

The PVS system will be a component of the overall IoEn to be built. IoEn refers to a system that coordinates energy assets in a manner similar to the information internet, making the energy assets addressable, dispatchable and coordinated. This is in contrast with current distributed energy assets that operate with little or no awareness of other available assets, reducing their collective effectiveness. The IoEn will coordinate all the system assets - including PVS, PV, stationary storage and load curtailment - to deliver robust peak shaving, peak shifting, and demand response optimized for customer and utility cost benefit through logic that factors in utility rate structure to maximize economic value. IoEn will demonstrate prospective community portfolio dispatchability for integrated load and generation stabilization, decreased grid-energy consumption, and reduced need for grid services.

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

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

Additional Benefits: The array-integrated PVS in this project will reduce hardware costs, installation costs, and capture significantly more solar energy than a traditional solar module. Whereas a typical 400kW PV system would be expected to produce about 850 MWh per year, a comparable PVS system may produce up to 960MWh, resulting in additional carbon savings of 41,000 lb of CO2 per year (0.588 lbs of CO2 per kWh).

The project will provide IoEn as a model for evaluating, planning and installing energy storage and energy management at the hundreds of educational facilities across the state that have installed solar PV arrays. Curriculum in energy management, environmental science, and computer science will benefit from access to the College of San Mateo (CSM) IoEn, as the IoEn Platform can be utilized for educational, scientific, and operational studies.

Agreement Objectives

The objectives of this Agreement are to:

1. Develop and characterize the increased generation efficiency of PVS compared to both conventional PV and conventional PV and storage. PVS is projected to produce as much as 13% more energy over a conventional PV system.

2. Deploy and characterize an IoEn with multiple asset coordination – including PVS, PV, stationary storage and load curtailment - to deliver peak shaving and peak shifting as well as prospective community portfolio dispatchability, demand response, ancillary services for integrated load and generation stabilization, decreased grid-energy consumption, and grid services. This includes determining optimum sizing for solution assets to maximize benefits in both new and upgrade scenarios.

3. Operate the IoEn to meet the project's goals and reduce max demand by at least 10% in each of 12 continuous months at the CSM campus.

4. Enhance workforce training on multi-asset, multi-application energy systems by leveraging the CSM IoEn with online resources, materials and presentations covering technical and economic information integrated into existing engineering, energy management, computer science, construction management and renewable energy courses across the entire San Mateo County Community College District (SMCCCD) system.

5. Educate senior stakeholders including investor-owned utilities, municipal zoning and building officials, energy managers and engineers, product developers and policymakers on the project objectives, design, outcomes, challenges, gaps and policy considerations of community scale generation, load management and grid stabilization.

6. Inform and support the planned execution of CSM energy efficiency upgrades to maximize the efficacy of those upgrades.

EXHIBIT A
Scope of Work

II. 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

- 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.
- Submit the final product to the CAM once agreement has been reached on the draft. The CAM will provide written approval of the final product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- If the CAM determines that the final product does not sufficiently incorporate his/her comments, submit the revised product to the CAM within 10 days of notice by the CAM, unless the CAM specifies a longer time period.

For products that require a final version only

- Submit the product to the CAM for approval.
- If the CAM determines that the product requires revision, submit the revised product to the CAM within 10 days of notice by the CAM, unless the CAM specifies a longer time period.

For all products

- Submit all data and documents required as products in accordance with the following Instructions for Submitting Electronic Files and Developing Software:

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

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

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Documents intended for public distribution will be in PDF file format. The Recipient must also provide the native Microsoft file format.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

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

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

MEETINGS

Subtask 1.2 Kick-off Meeting
The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

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

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

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

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

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

- Provide an *Updated Project Schedule, List of Match Funds,* and *List of Permits*, as needed to reflect any changes in the documents.

The CAM shall:

- Designate the date and location of the meeting.
- Send the Recipient a *Kick-off Meeting Agenda*.

Recipient Products:

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

CAM Product:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

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

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit. However, the CAM may schedule additional CPR meetings as necessary. The budget will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not

increase. CPR meetings generally take place at the Energy Commission, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Recipient shall:

- Prepare a *CPR Report* for each CPR meeting that: (1) discusses the progress of the Agreement toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project.
- Submit the CPR Report along with any other *Task Products* that correspond to the technical task for which the CPR meeting is required (i.e., if a CPR meeting is required for Task 2, submit the Task 2 products along with the CPR Report).
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

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

Recipient Products:

- CPR Report(s)
- Task Products (draft and/or final as specified in the task)

CAM Products:

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

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM and the CAO of the following Agreement closeout items:
    - Disposition of any state-owned equipment.
    - Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
    - The Energy Commission's request for specific "generated" data (not already provided in Agreement products).
    - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
    - "Surviving" Agreement provisions such as repayment provisions and confidential products.
    - Final invoicing and release of retention.

- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
    - Summarize all Agreement activities conducted by the Recipient for the preceding month, including 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.
    - Provide a synopsis of the project progress, including accomplishments, problems, milestones, products, schedule, fiscal status, and any evidence of progress such as photographs.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the "Payment of

Funds" section of the terms and conditions. In addition, each invoice must document and verify:

- Energy Commission funds received by California-based entities;
- Energy Commission funds spent in California *(if applicable)*; and
- Match fund 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 and approve 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 a 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.
- Submit a draft of the outline to the CAM for review and comment.
- Once agreement has been reached on the draft, submit the final outline to the CAM. The CAM will provide written approval of the final outline within 10 days of receipt.

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

- Style Manual

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline and the Style Manual provided by the CAM.
- Submit a draft of the report to the CAM for review and comment. Once agreement on the draft report has been reached, the CAM will forward the electronic version for Energy Commission internal approval. Once the CAM receives approval, he/she will provide written approval to the Recipient.
- Submit one bound copy of the Final Report to the CAM.

Products:

- Final Report (draft and final)

EXHIBIT A
Scope of Work

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.
  - A copy of 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.

EXHIBIT A
Scope of Work

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.

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

III. TECHNICAL TASKS

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

TASK 2 SYSTEM DESIGN AND TESTING

The goals of this task are to design the PVS and execute integration testing at the SolarTAC Technology Acceleration Center, 15151 East Alameda Pkwy, Aurora, Colorado prior to deployment at the College of San Mateo.

Subtask 2.1 PVS Module Development Analysis and Overall Design

The Recipient shall:

- Define system performance targets such as total yield, yield improvement over conventional PV, heat and stress tolerance, time to install, and time to service.
- Execute attachment finite-element analysis simulation to evaluate specific components including wiring and framing to ensure wind-load, thermal and other requirements are met.
- Determine specific components for use at the module level for the frame-attached architecture including battery types and innovative materials where appropriate.
- Produce and provide *Module Development Analysis Report* which defines component requirements and projected performance characteristics.
- Design module architecture.
- Determine final deployment location characteristics such as dimensions, shade, access constraints.
- Run a yield analysis on selected layout to show the power and energy of a pure PV system using one of the standard simulation tools such as PVSyst or Helioscope.
- Determine optimum canopy deployment style (single slope, "V", or "^") based on location dimensions and shade conditions.
- Produce and provide *Array Design Documents* which define canopy style, specific assembly requirements, tolerances, and acceptable operating conditions.
- Produce and provide *Electrical Design Schema* which are electrical single line drawings and communications networks defining final electrical relationships between all components of the fully deployed IoEn system. The electrical layout will include the PVS modules connecting to an AC bus carrying the energy, the stand-alone PV array, the stationary energy storage, the heating, ventilating and air conditioning (HVAC) system, the facility management system, and the IoEn advanced energy operating system.
- Review design documents with all project team for refinement.

Products:

- Module Development Analysis Report
- Array Design Documents
- Electrical Design Schema

Subtask 2.2 PVS Component Acquisition and Array Assembly

The Recipient shall:

- Evaluate sourcing of selected components for cost and performance.
- Acquire selected components and deliver to the pre-deployment alpha test site at SolarTAC.
- Build the complete PVS system.
- Assess physical component acceptance and assembly characteristics.
- Produce and provide a *PVS Component Acquisition and Array Assembly Report* of PVS system at test facility including a description of the acquisition and assembly, and photographs.

Products:

- PVS Component Acquisition and Array Assembly Report

Subtask 2.3 PVS Integration Test

The Recipient shall:

- Define scope of testing including physical components to evaluate which will include each rack, DC/AC inverter, DC/DC converter, Battery Management System, and container level Energy Management System.
- Define compliance testing requirements such as UL 1741, UL 1973, and IEEE 1547.
- Define functional testing requirements to validate subsystems, reduce risks, and maximize performance.
- Create and provide a *PVS Integration Test Plan* which describes test objectives, procedures, conditions, facilities, and equipment.
- Execute test plan.
- Evaluate results and produce *PVS Integration Test Results Report* which details the results of the testing including specific electrical, safety, thermal, utility compatibility performance and other critical factors.
- Modify design of the PVS system based on test results, if required.
- Conduct CPR activities and produce *CPR Report #1*, as identified in Task 1.3.

Products:

- PVS Integration Test Plan
- PVS Integration Test Results Report
- CPR Report #1

TASK 3 SYSTEM DEPLOYMENT

The goals of this task are to install the PVS and IoEn system and ensure the system is fully and properly functional.

Subtask 3.1 Engineering and Construction Design

The Recipient shall:

- Conduct Subcontractor procurement activities, consistent with Task 1.9

- Produce and provide *Procurement Documents* which details the procurement process and criteria, proposal selected (if appropriate), and selected vendor credentials.
- Develop and provide a *Construction Plan Set* which includes detailed site design documents for electrical, civil and structural work including: foundations if needed, conduits and trenching, communication network details including placement of the weather station, gateway and system controller.

Products:
- Procurement Documents
- Construction Plan Set

Subtask 3.2 Permitting and Interconnection

The Recipient shall:
- Identify specific agencies to be engaged for all required permits including the Division of the State Architect.
- Conduct permitting activities, consistent with Task 1.8.

Subtask 3.3 Construction

The Recipient shall:
- Execute site management and preparation.
- Deliver system components (may be phased to timing of construction).
- Build two canopies for PVS and PV arrays.
- Build 200 kW / 200 kWh PVS array.
- Build stand-alone 200 kW PV array.
- Build 200 kWh stationary storage battery installation.
- Install associated cabling, panels, transformers and inverters as needed.
- Execute construction completion review.
- Integrate advanced energy management system.
- Integrate HVAC demand management.
- Integrate facility energy management system (EMS).
- Complete and provide an *IoEn Construction Report* including photographs of fully installed major system components: PVS system on canopy, PV system on canopy and fixed storage.
- Conduct CPR activities and produce *CPR Report #2*, as identified in Task 1.3.

Products:
- IoEn Construction Report (Draft and Final)
- CPR Report #2

Subtask 3.4 Interconnection and Incentives

The Recipient shall:
- Inform Pacific Gas & Electric (PG&E) representative about project scope.
- Submit Interconnection Application.
- Assist PG&E with site inspections.

- Participate in PG&E reviews (application, initial, supplemental), provide required materials, and respond to PG&E questions.
- Secure and provide *Interconnection Studies* from PG&E, if needed. Studies provide detail on grid impact and ability to incorporate new systems, including identification of distribution grid upgrades required, if any.
- Test the complete communication layer including full EMS and battery management system
- Secure and provide a *Permission To Operate Letter* from the utility
- Submit applications for the California Public Utility Commission Self-Generation Incentive Program rebates.

Products:
- Interconnection Studies (if applicable)
- Permission To Operate Letter

Subtask 3.5 Commissioning

The Recipient shall:
- Verify that the installation is complete by physically reviewing all components.
- Verify that the installation is safe, including inspection of housing and bracing.
- Document as-built conditions, including relevant photos.
- Establish performance benchmarks such as peak, shoulder, overall and load curtailment yield.
- Verify system performance through system current and voltage sensors. Total energy delivered will also be calculated based on these sensors.
- Verify proper system operation by exercising configuration controls.
- Prepare and provide a *Commissioning Report* that includes a discussion of the commissioning process and results and documentation of as-built conditions.
- Document and provide *System Configuration Parameters Report* on the optimal configuration parameters for customizable system elements.

Products:
- Commissioning Report
- System Configuration Parameters Report

Subtask 3.6 Operational Handover

College of San Mateo facilities staff will be trained by system vendors and installers, and additional periodic training will be provided. The project team will provide scheduled maintenance and monitoring of system performance, and subcontractors will work closely with the campus community staff to achieve energy and operational goals.

The Recipient shall:
- Create and provide a system *Operating Manual* on the operations and maintenance of all key components of the overall IoEn system, including:
    - Description of system architecture.
    - Performance monitoring.
    - Trouble-shooting.

    - System configuration.
- Train SMCCCD staff on system operations guidelines with 2 workshops.
- In coordination with the project team, maintain and monitor system to ensure continued performance in relation to optimal operating specifications.
- Create and provide *Training Materials* which will include handouts and presentation materials used in workshops, which will include:
    - Description of system architecture.
    - Performance monitoring.
    - Trouble-shooting.
    - System configuration.

Products:

- Operating Manual
- Training Materials

TASK 4 EFFICIENCY AND EDUCATIONAL ENHANCEMENTS

The goals of this task are to:

- Inform the planned energy efficiency upgrades with recommendations on optimal measures strategically aligned to the proposed system.
- Leverage the proposed system deployment for workforce training opportunities through curriculum enhancement.

Subtask 4.1 Energy Efficiency Upgrades

The Recipient shall:

- Identify building efficiency tools and systems such as building management systems that can be newly installed or upgraded to maximize the proposed system.
- Develop a plan for extensive energy efficiency upgrades across the campus to lower both overall demand and peak loads, including where feasible identified optimization tools and systems.
- Execute identified energy efficiency upgrades using separately secured funding
- Catalogue and provide a *CSM Energy Efficiency Upgrade List* of energy efficiency upgrades implemented at the campus.
- Integrate newly installed upgrades with IoEn system

Products:

- CSM Energy Efficiency Upgrade List

Subtask 4.2 Educational Enhancements

The Recipient shall:

- Develop and provide an *Educator's Fact Sheet* for the proposed system to inform faculty on the proposed system. The fact sheet will identify learning opportunities during the deployment and ongoing operations of the proposed system; and include a description of the system, its benefits, and specific aspects relevant to educational opportunities.
- Identify specific courses and create a *List of Courses* where the proposed system will be leveraged for training purposes.

- Develop Online Resources to provide technical and economic information on the design, deployment, and operation of the CSM IoEn for use by students, courses, faculty, and administrators.
- Prepare and provide an *Online Resources Memo* that will include a web link to and a description of the Online Resources

Products:

- Educator's Fact Sheet
- List of Courses
- Online Resources Memo

TASK 5: Data Collection and Reporting

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

The Recipient shall:

- Compile 12 months of historic information on the community electricity demand, natural gas demand,[1] and the operation of any existing generators in the community. Granularity of the data must be equal to or better than the granularity used for the applicable time-of-use tariff provided by the local utility.
- Incorporate historic data into the *Historic Operational Data Report*. This report shall include but not be limited to filling out the Energy Commission's *Energy Consumption Reporting Form* for each metered entity participating in this project.
- Collect at least 12 months of technical data on the operation of the installed generation resources, the innovative energy management strategies, and the energy demand of the community (electrical and natural gas,[2] as applicable).
    - Energy consumption and generation data must have granularity equal to or better than the granularity used for the applicable time-of-use tariff provided by the local utility.
    - Data on the use of innovative energy management strategies must identify in which time period, consistent with the energy consumption and generation data, the strategies were enacted and to what level they were enacted, if multiple levels are available.
    - Incorporate technical data into the *Project Operational Data Report*.
- Document the interconnection process in the *Interconnection Process Report*, which will include but not be limited to:
    - A List of interconnection and permitting costs.
    - Documentation of issues and barriers in the interconnection and permitting process.
    - An interconnection timeline.

Products:

- Historic Operational Data Report
- Project Operational Data Report
- Interconnection Process Report
- Energy Consumption Reporting Form

[1] Natural gas usage information must only be provided if the community's natural gas demand will change as a direct result of innovative strategies or generation installed in the community.
[2] Natural gas usage information must only be provided if the community's natural gas demand will change as a direct result of innovative strategies or generation installed in the community.

EXHIBIT A
Scope of Work

TASK 6 EVALUATION OF PROJECT BENEFITS
The goal of this task is to report the benefits resulting from this project.

The Recipient shall:

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) Kick-off Meeting Benefits Questionnaire; (2) Mid-term Benefits Questionnaire; and (3) Final Meeting Benefits Questionnaire.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:

    - o <u>For Product Development Projects and Project Demonstrations:</u>
        - Published documents, including date, title, and periodical name.
        - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
        - Greenhouse gas and criteria emissions reductions.
        - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
        - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
        - A discussion of project product downloads from websites, and publications in technical journals.
        - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
        - <u>Additional Information for Product Development Projects</u>:
            - 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.
        - <u>Additional Information for Product Demonstrations</u>:
            - Outcome of demonstrations and status of technology.
            - Number of similar installations.
            - Jobs created/retained as a result of the Agreement.

    - o <u>For Information/Tools and Other Research Studies:</u>
        - 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.

In addition to the above information the following must be included in the final report.

- A discussion of how the community scale generation and strategies have provided or will provide value and benefits to the community, the local distribution grid, the electric utility, and ratepayers.
- A discussion of the community's use of renewable resources, CHP, innovative generation deployments, demand response, energy storage, and other strategies to help create a more robust grid.
- A discussion of the barriers and solutions to deployment of community scale generation with innovative energy management strategies, including, but not limited to, financing options, permitting requirements, and regulatory activities.
- Documentation of the project outcome, either success or failure, as measured in accordance with parameters approved by the Energy Commission.
- Development of business cases that maximize the daily operating value to the community, local distribution grid, and electric utility.
- A discussion of lessons learned and best practices, including a design configuration that provides the highest value with minimal costs, financial and otherwise.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire
- Additions to the final report.

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.

EXHIBIT A
Scope of Work

The Recipient shall:

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

Products:

- Initial Fact Sheet (draft and final)
- Final Project Fact Sheet (draft and final)
- Presentation Materials (draft and final)
- Best-practices Guide (draft and final)
- Technology/Knowledge Transfer Plan (draft and final)
- Technology/Knowledge Transfer Report (draft and final)

PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

RESOLUTION NO: 15-0610

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: BAY AREA CLIMATE COLLABORATIVE

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

RESOLVED, that the Energy Commission approves Agreement EPC-14-083 from PON-14-307 with **Prospect Silicon Valley dba Bay Area Climate Collaborative (BACC)** for a **$2,999,601** grant to demonstrate integrated solar photovoltaic, energy storage, and advanced power electronics within a single module to reduce community energy load variability; 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 June 10, 2015.

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

Harriet Kallemeyn,
Secretariat