

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

New Agreement EPC-18-022 (To be completed by CGL Office)

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

Recipient's Legal Name	Federal ID Number
Natron Energy, Inc.	45-5350907

Title of Project
Advanced Energy Storage for Electric Vehicle Charging Support

Term and Amount	Start Date	End Date	Amount
	6/28/2019	3/30/2022	\$ 2,998,064

Business Meeting Information
☐ ARFVTP agreements under \$75K delegated to Executive Director.

Proposed Business Meeting Date	6/12/2019	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
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Business Meeting Presenter	Qing Tian	Time Needed:	5 minutes
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Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description

NATRON ENERGY, INC. Proposed resolution approving Agreement EPC-18-022 with Natron Energy, Inc. for a \$2,998,064 grant to demonstrate a sodium-ion battery energy storage system to support an electric vehicle fast charger and demonstrate its value to support deployment of associated high-power infrastructure, and adopting staff's determination that this action is exempt from CEQA. (EPIC funding) Contact: Qing Tian Staff presentation: 5 minutes

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: Cal. Code Regs., tit 14, § 15301 ; Cal. Code Regs., tit 14, § 15303☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:

This project will involve the development, installation and demonstration of a sodium-ion battery energy storage system. The system will be manufactured at an existing facility and then installed and tested at an existing electric vehicle fast charging station in an existing parking lot. Project activities are limited to these two sites which are already permitted for the proposed activities. To develop, manufacture, and install the system some concrete foundations, pavements and existing buried electrical conduits may need to be modified and temporary equipment (inverter and battery racks) will need to be mounted at the manufacturing facility. This project will not generate any hazardous waste, will not generate noise or odors in excess of permitted levels and will not involve any historic resources. This project is therefore categorically exempt under CEQA Guidelines Section 15301 because it consists of the minor alteration of existing facilities and mechanical equipment within or at those facilities that involves negligible expansion of existing uses at the facilities. This project is also categorically exempt under CEQA Guidelines Section 15303 as the installation of small new equipment in small structures. Further, none of the exceptions listed in CEQA Guidelines Section 15300.2 apply to this project.

☐ 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)

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION



Legal Company Name:	Budget
Energy & Environmental Economics, Inc.	\$ 99,000
TBD - Contractor	\$ 99,000
TBD - Contractor	\$ 96,000
TBD- Design Contractor	\$ 65,000
TBD-Software Programming	\$ 0
TBD Professional Services	\$ 0
The Regents of the University of California, on behalf of the San	\$ 530,867
Dokken Engineering	\$ 21,600
TBD - SubContractor Sub	\$ 95,869

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION



List all key partners: (attach additional sheets as necessary)
Legal Company Name:

Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	17-18	301.001E	\$2,998,064
			\$
			\$
			\$
			\$
			\$
R&D Program Area:	ESRO: ETSI	TOTAL:	\$2,998,064
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Robert Rogan			Name:	Robert Rogan		
Address:	3542 Bassett St			Address:	3542 Bassett St		
City, State, Zip:	Santa Clara, CA 95054-2704			City, State, Zip:	Santa Clara, CA 95054-2704		
Phone:	510-367-3010 /	Fax:	- -	Phone:	510-367-3010 /	Fax:	- -
E-Mail:	rob@natron.energy			E-Mail:	rob@natron.energy		

Selection Process Used	
<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: GFO-18-304
<input type="checkbox"/> First Come First Served Solicitation	

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

Agreement Manager	Date	Office Manager	Date	Deputy Director	Date
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EXHIBIT A

Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR¹	Task Name
1		General Project Tasks
2		Battery Energy Storage System (ESS) Design
3		ESS Manufacturing Setup
4		Manufacture, Test, and Ship ESS Module & System
5		EMS Software
6	X	Project Design and Permitting
7		Project Engineering, Procurement, and Construction
8	X	ESS Testing
9		Evaluation of Project Benefits
10		Technology/Knowledge Transfer Activities
11		Production Readiness Plan

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
ESS	Energy Storage System
EV	Electric Vehicle
EVFC	Electric Vehicle Fast Charging
PB / Na-Ion	Prussian Blue Electrode / Sodium Ion
QA	Quality Assurance
QC	Quality Control
Recipient	Natron Energy, Inc.
TAC	Technical Advisory Committee
UCSD	University of California San Diego

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

A. Purpose of Agreement

The purpose of this Agreement is to fund the development, manufacturing, installation, and demonstration of a Sodium-Ion energy storage system (ESS) with high power, fast cycling, and long lifetime to enable wide deployment of electric vehicle fast charging stations with minimal impact to the electric grid.

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

EXHIBIT A

Scope of Work

B. Problem/ Solution Statement

Problem

As more electric vehicles (EVs) are purchased, EV fast charging (EVFC) stations will be built to meet demand, further exacerbating the issues of grid connectivity, stability, and consumer costs. Managed charging without the support of energy storage dedicated to EV charging will not address the major cost barriers for public and workplace charging. Energy storage has not yet been widely adopted for the EVFC market due to costs, lifetime, and performance issues of currently available Li-Ion technology.

EVFC stations need a battery technology that has long cycle life of at least 5 years under strenuous daily charge and discharge cycling. Thus a long lifetime, high rate of discharge relative to capacity (C-rate), and temperature resilient battery is needed. This type of technology has not been available to the market until now.

Solution

A combination of competitive cost at modest production volume, high power, and a long cycle life make ESS an attractive substitute for lithium-ion (Li-ion) technology in the EVFC market.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of the project are to:

- 1) Demonstrate an ESS of approximately 100 kW / 100 kWh;
- 2) Provide the California stationary energy storage market with a technologically superior, economically viable alternative to the incumbent portfolio of Li-ion batteries;
- 3) Demonstrate increased California ratepayer benefits for the early-adopter market application of EVFC that will appropriately value the characteristics of the PB/Na-ion battery technology;
- 4) Support the economic deployment of high-power EVFC infrastructure to increase EV adoption, enabling California's goal of 5 million EVs by 2030 and 10,000 EVFC by 2025;
- 5) Create California employment opportunities in PB/Na-ion battery manufacturing, assembly, deployment and operations; and
- 6) Inform public and private sector stakeholders of the regulatory changes required to accomplish goals 2-5, including topics of environmental justice and access to low income and Disadvantaged Communities.

Ratepayer Benefits:² This Agreement will provide ratepayer benefits in four key areas. First, the proposed battery solution will enable more EVFC stations to be deployed, providing more access for consumers to charge their vehicles. Second, by lowering the costs of battery solutions and increasing their effectiveness with EVFC stations, those station operators are better able to compete for customers through lower customer charges at each station. Third, the proposed

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).

EXHIBIT A

Scope of Work

technology is inherently safe and non-flammable, increasing public safety as well as allowing EVFC developers to site projects in remote areas where wildfire risk would eliminate any flammable battery technologies. Finally, by providing a proof point in the EVFC market, this technology can be further scaled to support large stationary storage applications for other grid applications.

Technological Advancement and Breakthroughs:³ In order for the State to meet its renewable energy goals under SB 350 and GHG goals under AB 32 and Executive Order B-30-15, energy storage must be deployed at large scale to offset the variability of renewable solar and wind generation resources. Li-ion batteries have potential to meet some of this demand, but are technically and economically unsuited for high power, short duration dispatch applications (i.e., high cycle applications) because their limited cycle life forces system replacements every 3 – 10 years, with old cells removed and safely recycled to prevent contamination from the toxic materials found in all Li-ion chemistries.

This project will result in a demonstration of the recipient's Prussian Blue (PB) technology at a scale of 100 kWh, a capacity relevant for the EVFC stations and utility markets. This technology will promote the installation of localized energy generation by supporting EVFC and other distributed generation deployments, including behind-the-meter systems. For these two reasons, this project will also help the State meet the goals of the Governor's Clean Energy Jobs Plan (2011).

Agreement Objectives

The Agreement Objectives are:

- 1) Demonstrate an ESS of approximately 100 kW / 100 kWh, a size of more than 1000 times greater energy than existing products, which are approximately 0.2 kWh.
- 2) Install expanded manufacturing capacity dedicated to the electric EVFC market and use this capacity to produce a battery ESS based on existing Prussian Blue/Sodium Ion batteries,
- 3) Perform performance validation testing of the ESS prior to the full demonstration (Phase I)
- 4) Upgrade an existing publicly accessible EVFC station with a production sized ESS, inverter, and energy management software (EMS) (Phase II)
- 5) Operate the EVFC station, analyze the resulting ESS performance data, and assess ratepayer benefits. (Phase II)

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.

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:

EXHIBIT A

Scope of Work

- 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);

EXHIBIT A

Scope of Work

- 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 Presentation* 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.

EXHIBIT A

Scope of Work

- Submit the CPR Report Presentation 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 Presentation).
- Attend the CPR meeting.
- Present the CPR Report Presentation 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 Presentation(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:

EXHIBIT A

Scope of Work

- Disposition of any state-owned equipment.
- Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
- The Energy Commission's request for specific "generated" data (not already provided in Agreement products).
- Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
- "Surviving" Agreement provisions such as repayment provisions and confidential products.
- Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

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

Products:

- Progress Reports
- Invoices

Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. The CAM will review the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the Style Manual provided by the CAM.

EXHIBIT A

Scope of Work

Subtask 1.6.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Style Manual* provided by the CAM. (See Task 1.1 for requirements for draft and final products.)

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Style Manual, and Final Report Template provided by the CAM with the following considerations:
 - Ensure that the report includes the following items, in the following order:
 - Cover page (**required**)
 - Credits page on the reverse side of cover with legal disclaimer (**required**)
 - Acknowledgements page (optional)
 - Preface (**required**)
 - Abstract, keywords, and citation page (**required**)
 - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
 - Executive summary (**required**)
 - Body of the report (**required**)
 - References (if applicable)
 - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
 - Bibliography (if applicable)
 - Appendices (if applicable) (Create a separate volume if very large.)
 - Attachments (if applicable)
 - Ensure that the document is written in the third person.
 - Ensure that the Executive Summary is understandable to the lay public.
 - Briefly summarize the completed work. Succinctly describe the project results and whether or not the project goals were accomplished.
 - Identify which specific ratepayers can benefit from the project results and how they can achieve the benefits.
 - If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
 - Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
 - Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
 - Include a brief description of the project results in the Abstract.

EXHIBIT A

Scope of Work

- 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

EXHIBIT A

Scope of Work

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*)

EXHIBIT A

Scope of Work

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;

EXHIBIT A

Scope of Work

- U.S. Department of Energy research managers, or experts from other federal or state agencies relevant to the project;
- Public interest environmental groups;
- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members and a summary of relevant experience and potential value to the project. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.11.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

Products:

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

Subtask 1.11 TAC Meetings

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

The Recipient shall:

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

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

*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 BATTERY ENERGY STORAGE SYSTEM PRODUCT DESIGN

The goal of this task is to design both the Phase I ESS Module (to be tested at the UCSD Energy Storage Innovation Site) and Phase II ESS System (to be installed at the UCSD EVFC site). The Phase I ESS Module will be used to test the EMS software prior to installation of the full Phase II ESS installation at the EVFC site.

The Recipient shall:

- Define specifications and requirements for Phase I ESS Module and Phase II ESS System
- Modify battery cell format design and modifications to meet ESS performance specifications
- Complete mechanical design of Phase I ESS Module and Phase II ESS System
- Complete electrical design of Phase I ESS Module and Phase II ESS System
- Assess the design for manufacturability and reliability
- Prepare a three to five page *Phases I & II Design Memo* that will include but is not limited to:
 - Physical specifications of the ESS Module and ESS System
 - Electrical specifications of the ESS Module and ESS System
 - Summary product design drawings and information
 - Overview of necessary changes to manufacturing process
- Prepare *Phases I & II Design Presentation* summarizing the key points in the *Phases I & II Design Memo*

Products:

- Phases I & II Design Memo
- Phases I & II Design Presentation

TASK 3 ENERGY STORAGE SYSTEM MANUFACTURING SETUP

The goal of this task is to specify, procure, and install manufacturing equipment to make the ESS Module and ESS System. Once manufacturing equipment is installed, the ESS Module and ESS System will be manufactured, assembled, and made ready for shipment to sites.

The Recipient shall:

- Specify required manufacturing equipment
- Procure manufacturing equipment
- Install and commission manufacturing equipment
- Define cell manufacturing process
- Define quality assurance (QA) and quality control (QC) processes for cells
- Define module assembly process
- Define quality assurance (QA) and quality control (QC) processes for modules
- Define rack assembly process
- Define quality assurance (QA) and quality control (QC) processes for racks

EXHIBIT A

Scope of Work

- Document cell, module, and rack manufacturing process for training technicians
- Write a three to five page *Manufacturing and Product Assembly Process Memo* that will include but is not limited to:
 - Manufacturing process outline
 - Manufacturing equipment commissioning report
 - Cell, Module, and Rack QA/QC process summary
 - Summary of lessons learned
- Prepare *Manufacturing and Product Assembly Process Presentation* summarizing the key points in the *Manufacturing and Product Assembly Process Memo*

Products:

- Manufacturing and Product Assembly Process Memo
- Manufacturing and Product Assembly Process Presentation

TASK 4 MANUFACTURE, TEST, AND SHIP ESS MODULE & SYSTEM

The goal of this task is to manufacture, assemble and test, and make ready for shipment the ESS units. The ESS units will then be shipped to the site.

The Recipient shall:

- Manufacture cells
- Perform QA/QC on manufactured cells
- Assemble module
- Perform QA/QC on module
- Package and prepare module for shipment to the site
- Assemble modules for racks
- Perform QA/QC on modules for racks
- Assemble racks
- Perform QA/QC on racks
- Package and prepare racks for shipment to the site
- Develop a three to five page *Phase II ESS System Manufacturing Memo* that will include but is not limited to:
 - Start and end dates of manufacturing and assembly runs
 - Cell, module, and rack manufacturing and assembly summary learnings
 - Summary of QA/QC results for manufactured cells
 - Summary of QA/QC results for assembled module
 - Summary of QA/QC results for assembled racks
 - Photos of the ESS products for Phase I & Phase II
 - Summary of lessons learned for Phase I & Phase II
- Prepare a *Phase II ESS System Manufacturing Presentation* summarizing the key points in the *Phase II ESS System Manufacturing Memo*

Products:

- Phase II ESS System Manufacturing Memo
- Phase II ESS System Manufacturing Presentation

TASK 5 ENERGY MANAGEMENT SYSTEM SOFTWARE

EXHIBIT A

Scope of Work

The goals of this task are to specify, program, and test the EMS Software to operate the ESS in conjunction with the EVFC station, and deploy and commission the software at the EVFC station when the Phase II ESS System is installed.

Subtask 5.1 Phase II EMS specification, requirements, and programming

The goal of this task is to specify, program, and test the EMS Software to operate the ESS in conjunction with the EVFC station.

The Recipient shall:

- Review capabilities of the EMS currently deployed at site
- Define EMS system requirements, identify functional gaps
- Define EMS use cases
- Write and/or modify EMS software
- As necessary, program the ESS battery management system to meet EMS requirements
- Define communication and data flow architecture
- Write the *EMS Specifications and Programming Report* that will include but is not limited to:
 - Summary of EMS use cases
 - Summary of EMS software functionality
 - Summary of communication and data flow architecture

Products:

- EMS Specifications and Programming Report

Subtask 5.2 Phase II EMS deployment and commissioning

The goal of this task is to deploy and commission the EMS software at the site.

The Recipient shall:

- Deploy and commission EMS software onsite
- Confirm communication and data flows are operational through testing
- Test, and as necessary, debug EMS software's ability to dispatch battery for defined use cases.
- Write *EMS Commissioning Report* that will include but is not limited to:
 - Summary of communication and data flow tests
 - Commissioning and preliminary operation data

Products:

- EMS Commissioning Report

TASK 6 PROJECT DESIGN AND PERMITTING

The goal of this task is to design the project, and to submit and receive permits for construction.

The Recipient shall:

- Phase I
 - Design project layout
 - Design project single-line
 - Design ESS system project design

EXHIBIT A

Scope of Work

- Phase II
 - Design project layout
 - Design project single-line
 - Design ESS system project design
- Submit Phase I and Phase II permit applications (“As Built”) to UCSD
- Receive permits for Phase I and Phase II construction.
- Develop a three to five page *Project Design and Permitting Memo* that will include but is not limited to:
 - Layouts (As Built)
 - Single-lines (As Built)
 - Plan for “in field” UL certification of Phase II Product
- Prepare a *Project Design and Permitting Presentation* summarizing the key points from the *Project Design and Permitting Memo*
- Prepare *CPR Report Presentation #1* and participate in CPR Meeting as described in subtask 1.3

Products:

- Project Design and Permitting Memo
- Project Design and Permitting Presentation
- CPR Report Presentation #1

TASK 7 PROJECT ENGINEERING, PROCUREMENT, AND CONSTRUCTION

The goal of this task is to construct and commission the Phase I ESS Module and Phase II ESS System at the UCSD Energy Storage Innovation Site and at the EVFC site, respectively.

Subtask 7.1 Equipment procurement

The goal of this task is to procure the interconnection equipment necessary to complete the project, and develop a construction and commissioning plan for the Phase II installation.

The Recipient shall:

- Procure equipment for integration of Phase II ESS System and EVFC station (i.e. inverter, interconnection equipment, connectivity and communication devices)
- Prepare and provide a *Construction and Commissioning Plan* that will include but is not limited to:
 - Specific key activities that will take place for successful completion of construction and commissioning
 - A timeline for completion of these key construction and commissioning activities

Products:

- Construction and Commissioning Plan

Subtask 7.2 Phase I ESS Module construction and commissioning

The goal of this task is to construct and commission the Phase I ESS Module at the Energy Storage Innovation Site.

EXHIBIT A

Scope of Work

The Recipient shall:

- Construct and commission the Phase I ESS Module at the Energy Storage Innovation Site.
- Prepare a *Phase I Construction and Commissioning Report* that will include but is not limited to:
 - “As built” drawings and single lines
 - Affirmation that the system has been commissioned and is ready for testing

Products:

- Phase I Construction and Commissioning Report

Subtask 7.3 Phase II ESS System construction and commissioning

The goal of this task is to construct and commission the Phase II ESS System at the EVFC site.

The Recipient shall:

- Construct and commission the Phase II ESS System at the EVFC site
- Prepare a *Phase II Construction and Commissioning Report* that will include but is not limited to:
 - “As built” drawings and single lines
 - Summary of construction and commissioning results and lessons learned
 - Photos of installed system

Products:

- Phase II Construction and Commissioning Report

TASK 8 ENERGY STORAGE SYSTEM TESTING

The goals of this task are to test the ESS operation under a variety of use cases, and evaluate the performance of the ESS and its ability to impact EVFC station operations.

Subtask 8.1 Establish use cases for Phase I and Phase II, develop test plan

The goals of this task are to define the use cases and battery dispatch scenarios to be tested with the Phase I and Phase II ESS's, and develop a test plan to be executed after the systems have been installed and commissioned.

The Recipient shall:

- Define use cases for testing the Phase I and Phase II ESS's that are most relevant to the project's goals. Use cases may include such topics as demand charge management, load mitigation on utility circuits, frequency regulation, and vehicle to grid value enhancement. EVFC station utilization and operational variables will also be set (and varied) for the relevant use cases.
- Prepare a *Phase I and Phase II Test Plan* that will include but is not limited to:
 - ESS operating parameters and dispatch strategies
 - EVFC station utilization and operation variables
 - Simulated utility rates
 - Schedule of testing
- Prepare a *CPR Report Presentation #2* and participate in CPR Meeting as described in subtask 1.3

EXHIBIT A

Scope of Work

Products:

- Phase I and Phase II Test Plan
- CPR Report Presentation #2

Subtask 8.2 Phase I Testing

The goal of this task is to execute Phase I Testing and write a Test Report.

The Recipient shall:

- Execute testing according to the Phase I and Phase II Test Plan
- Adjust test plan and re-test according to observed results
- Collect at least 4 months of operations data from the ESS Module. The data collection period may be changed with prior CAM written approval.
- Prepare a *Phase I ESS Module Test Report* that will include but is not limited to:
 - Summary of test plan, and any modifications made to plan
 - Summary of ESS and EVFC operations tested
 - Results of Testing

Products:

- Phase I ESS Module Test Report

Subtask 8.3 Phase II Testing

The goal of this task is to execute Phase II Testing and write a Test Report.

The Recipient shall:

- Execute testing according to the Phase I and Phase II Test Plan
- Adjust test plan and re-test according to observed results
- Collect at least 4 months of operations data from the ESS System. The data collection period may be changed with prior CAM written approval.
- Prepare a *Phase II ESS System Test Report* that will include but is not limited to:
 - Summary of test plan, and any modifications made to plan
 - Summary of ESS and EVFC operations tested
 - Results of Testing

Products:

- Phase II ESS System Test Report

TASK 9 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:

EXHIBIT A

Scope of Work

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

EXHIBIT A

Scope of Work

- 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 10 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to develop a plan to make the knowledge gained, experimental results, and lessons learned available to the public and key decision makers.

The Recipient shall:

- Prepare an *Initial Fact Sheet* at start of the project that describes the project. Use the format provided by the CAM.
- Prepare a *Final Project Fact Sheet* at the project's conclusion that discusses results. Use the format provided by the CAM.
- Prepare a *Technology/Knowledge Transfer Plan* that includes:
 - An explanation of how the knowledge gained from the project will be made available to the public, including the targeted market sector and potential outreach to end users, utilities, regulatory agencies, and others.
 - A description of the intended use(s) for and users of the project results.
 - Published documents, including date, title, and periodical name.
 - Copies of documents, fact sheets, journal articles, press releases, and other documents prepared for public dissemination. These documents must include the Legal Notice required in the terms and conditions. Indicate where and when the documents were disseminated.
 - A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
 - The number of website downloads or public requests for project results.
 - Additional areas as determined by the CAM.
- Conduct technology transfer activities in accordance with the Technology/Knowledge Transfer Plan. These activities will be reported in the Progress Reports.
- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California Energy Commission.
- Provide at least (6) six *High Quality Digital Photographs* (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

EXHIBIT A

Scope of Work

- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

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

TASK 11 Production Readiness Plan

The goal of this task is to determine the steps that will lead to the manufacturing of technologies developed in this project or to the commercialization of the project's results.

The Recipient shall:

- Prepare a *Production Readiness Plan*. The degree of detail in the plan should be proportional to the complexity of producing or commercializing the proposed product, and to its state of development. As appropriate, the plan will discuss the following:
 - Critical production processes, equipment, facilities, personnel resources, and support systems needed to produce a commercially viable product.
 - Internal manufacturing facilities, supplier technologies, capacity constraints imposed by the design under consideration, design-critical elements, and the use of hazardous or non-recyclable materials. The product manufacturing effort may include "proof of production processes."
 - The estimated cost of production.
 - The expected investment threshold needed to launch the commercial product.
 - An implementation plan to ramp up to full production.
 - The outcome of product development efforts, such as copyrights and license agreements.
 - Patent numbers and applications, along with dates and brief descriptions.
 - Other areas as determined by the CAM.

Products:

- Production Readiness Plan (draft and final)

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: NATRON ENERGY, 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-18-022 with Natron Energy, Inc. for a \$2,998,064 grant to demonstrate a sodium-ion battery energy storage system to support an electric vehicle fast charger and demonstrate its value to support deployment of associated high-power infrastructure, and adopting staff's determination that this action is exempt from CEQA.; 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 12, 2019.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat