



Original Agreement #	EPC-17-014	Amendment #	1
Division	Agreement Manager:	MS-	Phone
ERDD	Felix Villanueva	51	916-327-2206
Recipient's Legal Name			Federal ID Number
Newcomb Anderson McCormick, Inc.			73-1731074
Revisions: (check all that apply)			
<input type="checkbox"/> Term Extension	New End Date: 3/31/2021	Include revised schedule and complete items A, B, C, & F below.	
<input checked="" type="checkbox"/> Budget Augmentation	Amendment Amount: \$ -3,735,704	Include revised budget and complete items A, B, C, D & F below.	
<input type="checkbox"/> Budget Reallocation		Include revised budget and complete items A, B, C, & F below.	
<input checked="" type="checkbox"/> Scope of Work Revision		Include revised scope of work and complete items A, B, C, E & F below.	
<input type="checkbox"/> Change in Project Location or Demonstration Site		Include revised scope of work and complete items A, B, C, E & F below.	
<input type="checkbox"/> Novation/Name Change of Prime Contractor/Recipient		Include novation documentation and complete items A, B, C, & F below.	
<input type="checkbox"/> Terms and Conditions Modification		Include applicable exhibits with bold/underline/strikeout and complete items A, B, C, & F below.	
A) Business Meeting Information			
Business Meeting approval is not required for the following types of Agreements:			
<input type="checkbox"/> ARFVTP agreements under \$75K delegated to Executive Director.			
Proposed Business Meeting Date	7/15/2019	<input checked="" type="checkbox"/> Consent	<input type="checkbox"/> Discussion
Business Meeting Presenter	Felix Villanueva	Time Needed:	5 minutes
Please select one list serve. EPIC (Electric Program Investment Charge)			
Agenda Item Subject and Description			
NEWCOMB ANDERSON MCCORMICK, INC. Proposed resolution amending Agreement EPC-17-014 with Newcomb Anderson McCormick, Inc. to reduce the budget by \$3,735,704 due to a scope of work change to decrease the deployment size of advanced plug load management devices and adopting staff's determination that this action is exempt from CEQA. (EPIC funding) Contact: Felix Villanueva			
B) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)			
Legal Company Name:	Budget		
California Conservation Corps	\$ 56,133		
California Community College Districts	\$ 45,000		
Ibis Networks, Inc.	\$0		
Embortec USA LLC	\$0		
C) List all key partners: (attach additional sheets as necessary)			
Legal Company Name:			
D) Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	16-17	301.001D	\$-3,735,704
			\$
R&D Program Area:	EERO: Buildings	TOTAL:	\$
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

EXHIBIT A Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Project Final Design
3	X	Final Site Outreach, Evaluation, and Coordination
4		Manufacturer and Installer Coordination
5	X	Advanced Plug-load Management Device System Installation
6	X	Measurement and Verification
7		Participant Satisfaction Interviews and Surveys
8		Evaluation of Project Benefits
9		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
APMD	Advanced Plug-load Management Device
APS	Advanced Power Strips
CalPlug	California Plug Load Research Center
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
GHG	Greenhouse Gas
IOU	Investor Owned Utility
IT	Information Technology
M&V	Measurement and Verification
PM	Project Manager
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to deploy advanced plug-load management devices (APMDs) at community college facilities, and evaluate the technology's performance relative to baseline conditions. The project will entail the installation and evaluation of APMDs ~~over a large sample size, approximately 55,000 computer workstations at 36 community college campuses,~~ to determine the viability of the technology as an energy efficiency measure that can help meet California's aggressive energy efficiency goals. The project will result in a comprehensive and well-documented summary of findings that will serve to inform future utility program and Proposition 39 offerings and large-scale deployments of APMD technology in institutional and

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

commercial market sectors. A successful mass deployment demonstration will accelerate market adoption of the technology.

B. Problem/ Solution Statement

Problem

Prior plug-load management projects (e.g. Tier 1 Advanced Power Strips (APS)) and other power strip technologies did not meet user's needs and prevented advancement of plug-load management technologies in the energy efficiency market. Recent technology advances in APMD technology have resulted in the development of low cost sensors that can be installed on every electrical plug load device, and allow building owners to both obtain real-time data and analytics on plug load equipment and apply control strategies to significantly cut plug load energy use. Also, prior studies did not adequately address computer workstation plug loads, which is the largest plug load energy use in educational facilities.

The lack of market penetration of previous technologies and the inadequacy of past studies to incorporate mass APMD deployments represents a significant gap in the understanding of the energy efficiency potential of this technology.

Solution

The Recipient will deploy and evaluate APMDs ~~on a mass scale (~55,000 units)~~ at multiple California community college district campuses in electric investor-owned utility (IOU) service territories throughout California. The Recipient will provide outreach and individual education programs to the Community College Districts, working closely with the Districts, equipment manufacturers and installation partner to advise the Districts of the benefits and features of APMD technologies. Following installation, the Recipient will also gather satisfaction information from District facilities and Information Technology (IT) staff, as well as APMD end-users.

The deployment of these devices ~~on a mass scale~~ will result in the generation of extensive and detailed performance dataset that will be used to evaluate the devices' energy and cost savings potential and cost effectiveness, identify any issues with mass deployment, compare and contrast multiple vendor offerings, and fully investigate the devices' energy information system capabilities and plug load management and control strategies.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Develop an optimized approach for the deployment of APMD technology on a large scale in the educational environment that encompasses outreach, education, site identification, technology installation, measurement and verification, and end-user satisfaction analysis.
- Generate a ~~large, complex and diverse dataset and analysis that accurately demonstrates the energy efficiency potential of successful APMD technology deployment on a large scale in the educational environment, and ability to achieve approximately 10 GWh/year of savings for all deployment sites.~~
- Accelerate broad market adoption of APMD technology by providing a comprehensive dataset and study that will identify energy savings, cost effectiveness, and other benefits to be incorporated into promotional materials and outreach activities targeting IOUs,

EXHIBIT A Scope of Work

technology vendors and property owners in educational, institutional, and commercial buildings in California.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of greater electricity reliability and lower costs, and reduced greenhouse gas (GHG) emissions. This will be achieved by reducing plug-load electricity consumption at community college campuses in the State of California, ~~by approximately 10,000,000 kWh/yr by the end of the project.~~ By reducing demand, this project will directly increase the reliability of the State's electric grid. Reducing demand on the State's grid will lessen the requirement for utilities to add both generation and distribution capacity, and increase electric system reliability. ~~These savings will ultimately translate to ratepayer savings, and a reduction of over 3,000 metric tons per year in GHG emissions.~~

Following a successful demonstration of mass AMPD deployment, general market adoption will be accelerated. If the technology were deployed at all California community college campuses served by IOUs, at similar penetration projected for this project, resultant savings ~~would~~ **could** increase to 36,000,000 kWh or more. Accelerated market adoption in the State's broader education and commercial sectors will further extend the potential savings. These savings will have similar electricity reliability and cost-lowering benefits to ratepayers.

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 developing optimal methods to deploy large quantities of energy-reducing APMD systems, and accelerating market transformation and adoption of the technology through a successful large-scale demonstration.

Agreement Objectives

The objectives of this Agreement are to:

- Evaluate whether the findings of the prior studies⁴ hold up in the case of mass deployment of the APMD technology. This evaluation will be presented in the Final Report.
- Investigate new issues that emerge when the APMD technology is deployed at a mass scale, across multiple customers and sites.
- Investigate energy information system capabilities associated with the APMD technologies that were not yet developed at the time of prior studies and/or were not the focus of the evaluations.
- Compare and contrast multiple vendor offerings in the commercial APMD market.

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.

⁴ Three recent studies for comparison: *Monitoring Computer Power Modes in a University Population*, (October 2014, by UC Irvine CalPlug), *Tier 2 Advanced Power Strips in Residential and Commercial Applications*, (April 2015, by San Diego Gas & Electric), and *Inventorizing Plug Load Equipment and Assessing Plug Load Reduction Solutions on a University Campus*, (October 2015 by Stanford University).

EXHIBIT A Scope of Work

- Investigate plug load management and control approaches beyond those applicable to the typical computer workstation, such as plug-loads found in copy rooms, kitchenettes, and small air conditioning units.
- Evaluate California workforce training and employment opportunities associated with deployment of the APMD technology under this study and beyond. This evaluation will be presented in the Final Report.
- Provide significant savings to the California IOU customers included in the study, which will in turn provide relief to the supply side of the statewide electric system.
- Evaluate potential for other large scale deployment of APMDs without further EPIC grant funding.

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**

EXHIBIT A

Scope of Work

- 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.

EXHIBIT A

Scope of Work

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

EXHIBIT A

Scope of Work

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.

EXHIBIT A Scope of Work

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

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

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

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

Products:

- Progress Reports
- Invoices

EXHIBIT A

Scope of Work

Subtask 1.6 Final Report

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

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

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

EXHIBIT A Scope of Work

- If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
- Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
- Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
- Include a brief description of the project results in the Abstract.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt
- Consider incorporating all CAM comments into the Final Report. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product
- Submit the revised Final Report and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period or approves a request for additional time.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

- Final Report (draft and final)
- Written Responses to Comments on the Draft Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type

EXHIBIT A Scope of Work

(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.

EXHIBIT A

Scope of Work

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;

EXHIBIT A

Scope of Work

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

The Recipient shall:

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

Products:

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

Subtask 1.11 TAC Meetings

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

The Recipient shall:

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

Products:

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)

EXHIBIT A

Scope of Work

- TAC Meeting Back-up Materials
- TAC Meeting Summaries

IV. TECHNICAL TASKS

TASK 2: PROJECT FINAL DESIGN

The goal of this task is to develop and finalize the specific strategies and tools that will be used in the execution of subsequent tasks. The terms “Final” and “Finalize” used here refer to finalization of the design created for the purposes of the project proposal. This will include guidelines for interfacing with District staff, instructions and requirements for project tracking, and customized data collection approaches for each participating manufacturer. Standardized tools and materials will also be developed to facilitate consistent documentation and delivery of all services provided.

The Recipient shall:

- Finalize the participating site outreach approach with the manufacturers and develop the *Outreach Informational Materials*. This will include the determination of which sites will be approached by the various manufacturers, and the development of outreach informational materials that explain the overall goals of the project, the characteristics and benefits of the proposed APMD technology, the roles of project stakeholders, and the general timeline for implementation. Early in the project, deployment sites will be given the choice of which AMPD manufacturer(s) offering they would like to use at their site. Approximately midway through the deployment finalization, the mix of products and target equipment/end-use will be evaluated. At that time, if the mix is deemed unbalanced, later deployment planning will influence product offerings, in order to achieve an appropriate sample of each.
- Develop the *Project Tracking Spreadsheet Templates*. These tracking spreadsheets will be standardized to ensure that data for implementation activities is consistent across all sites involved in the project, and will be used to log individual site information, track progress, and keep a record of identified issues and resolutions.
- Develop the *Data Collection Approach Memorandum* for each manufacturer that works with their native device data logging and delivery capabilities. As there are significant differences between the manufacturers’ product offerings, these memoranda will specify the format and content requirements for data to be exported from the manufacturers’ respective data logging devices, which will ensure that the various datasets can be compared and analyzed in a consistent, standardized manner.

Products:

- Outreach Informational Materials
- Project Tracking Spreadsheet Templates
- Data Collection Approach Memorandum

TASK 3: FINAL SITE OUTREACH, EVALUATION, AND COORDINATION

The goal of this task is to meet with participating site staff and develop a customized implementation plan for each site. The terms “Final” used here refers to finalization of the outreach performed for the purposes of the project proposal, which resulted in Commitment Letters from the California Community College Chancellor’s Office and multiple Community College Districts. This will involve conducting APMD product presentation meetings with site staff to inform them of available technology solutions, working with them to determine the optimal manufacturer that will

EXHIBIT A Scope of Work

meet their identified needs, finalizing installation site lists, and establishing a target installation schedule, as well as performing CPR activities per subtask 1.3. Site staff invited to this meeting include campus energy managers, facilities operators, electrical operators, student representatives from organizations such as Green Campus and information technology managers.

The Recipient shall:

- Conduct APMD product presentation meetings with the participating community colleges and the two manufacturers. These meetings will involve the presentation of the *Outreach Information Materials* developed in Task 2, identifying any areas of concern on the part of site staff, and answering any questions they may have about the project's requirements, goals, benefits, and schedule. Other areas of discussion will include internet security, access to data and privacy issues.
- Generate a *Memorandum of Understanding* (MOU) document for each participating District (contents of MOU are described in the next three bullets).
 - Establish participating sites' choice of APMD manufacturer(s). The recipient and the manufacturers will work closely with site staff to determine which product is best suited to meet their specific needs, and will document the site staff's choice of product in the Memorandum of Understanding - Participating Site APMD Choice component.
 - Work with the participating sites staff to evaluate ideal building areas to install APMD technology. The recipient and the manufacturers will work closely with site staff to develop a detailed list of facilities and specific areas in which the APMDs will be installed. These sites and all relevant characteristics will be documented in the Memorandum of Understanding - Target Building Area component.
 - Establish a target installation schedule and plan with the participating sites staff. The recipient and the manufacturers will work closely with site staff to determine a feasible schedule for installation based on the unique characteristics of each site, and will document the proposed schedule in the Memorandum of Understanding - Installation Schedule component.
- Prepare a CPR Report in accordance with subtask 1.3 (CPR Meetings).
- Participate in *CPR meeting #1*.

Products:

- Memorandum of Understanding (~~MOU, one for each participating District~~), including the following components:
 - ~~1. Participating Site APMD Choice component~~
 - ~~2. Target Building Area component~~
 - ~~3. Installation Schedule component~~
- CPR Report #1

TASK 4: MANUFACTURER AND INSTALLER COORDINATION

The goal of this task is to finalize the logistical approach for the project, specifically with respect to procurement and installation procedures with the APMD manufacturers and the installers. This will include coordinating and scheduling the procurement of specific products and specific quantities with each manufacturer, as well as product-specific education installation training involving the Recipient's Project Manager (PM), manufacturers, and installers.

EXHIBIT A

Scope of Work

The Recipient shall:

- Establish purchasing and product delivery procedures with the APMD manufacturers. The recipient will work with the manufacturers to develop contracts and purchase order templates that establish the procedure and specifications for ordering and procuring the required quantities of APMD products. Provide copies of all *Contracts*.
- Establish product delivery schedule with the APMD manufacturers. The recipient will work with the manufacturers to determine how quickly products can be purchased in the required quantities, and will incorporate the maximum amount of time allowed for each step of procurement into the contracts with each manufacturer.
- Issue purchase orders to the APMD manufacturers. The recipient will work with the manufacturers to identify the specific products and quantities required by each site identified in Task 3, and issue purchase orders as appropriate. Each purchase order will identify the type of product including specifications and other requirements identified in Tasks 2 and 3, the quantity, the per unit price, and the total amount requested. Provide copies of all *Purchase Orders*.
- Establish product installation schedule with the installer (the subcontractor). The recipient will contact the subcontractor and work closely with them to identify the appropriate level of staffing and the time required to install the devices at the facilities identified in Task 3. The recipient will update the installation schedule as necessary.
- Establish installation contract with installer. The Recipient will prepare an *Updated Installation Schedule* which will include the specific sites that will receive APMDs, the terms and conditions for payment, warranty, and other requirements of the installation contractor identified in Tasks 2 and 3.
- Conduct installation training meeting with the installer, recipient staff, and the manufacturers. The recipient will develop the required *Training Meeting Materials* identifying the site's specific needs, the schedule for installation, and the requirements for successful product delivery.

Products:

- Training Meeting Materials
- Updated Installation Schedule Baseline
- Contracts
- Purchase Orders

TASK 5: ADVANCED PLUG-LOAD MANAGEMENT DEVICE SYSTEM INSTALLATION

The goal of this task is the successful installation of APMDs at the identified sites, including education and training of site facilities staff, IT staff, and end-users.

The Recipient shall:

- Develop *Pre-installation End-user Education Materials* with the participating site staff.
- Coordinate installation for minimizing impact on building occupants and develop *Updated Installation Schedules 1-6* to discuss the items completed in Task 5 for each site
- Install the APMD equipment.
- Collect data on location of installation, electric loads served by APMD, other configuration variables.
- Configure APMD data collection and visualization systems.
- Verify that electric load data is being delivered from each device to the product website through the campus network.

EXHIBIT A Scope of Work

- Configure APMD energy reduction algorithms after baseline period.
- Commission overall APMD systems.
- Conduct post-installation staff training and hand off APMD equipment documentation, based on the pre-installation end-user education materials
- Prepare *Individual Site Summary Reports* (one report per participating District) with a description and inventory of each APMD installation and their equipment/end-use application. These will be reviewed with the customer upon installation completion so that they are aware of the installed equipment and best practices for proper operation and maintenance. The information in these site reports will also be reported as key statistics in the Monthly Progress Report (Task 1.5) and finally in the Final Report (Task 1.6).
- Provide *Copies of Manufacturers' APMD Equipment Documentation*. This will include product specifications and supporting manuals.
- Prepare a *CPR Report #2* in accordance with subtask 1.3 (CPR Meetings).
- Participate in *CPR meeting #2*.

Products:

- Pre-installation End-user Education Materials
- Updated Installation Schedule 1
- Updated Installation Schedule 2
- Updated Installation Schedule 3
- Updated Installation Schedule 4
- Updated Installation Schedule 5
- Updated Installation Schedule 6
- Individual Site Summary Reports (one report per District)
- Copies of Manufacturers' APMD Equipment Documentation
- CPR Report #2

TASK 6: MEASUREMENT AND VERIFICATION

The goal of this task is to conduct M&V of the energy and demand savings in accordance with industry standard protocols. This will include a baseline monitoring period, modelling of the baseline operation based on the baseline data, and a post-installation monitoring period.

The Recipient shall:

- Generate and prepare an *M&V Plan* in keeping with International Performance Measurement and Verification Protocol⁵ and CalPlug guidance. At a minimum, the M&V plan will identify the equipment to be monitored, the duration of the M&V, the use of the equipment, data collections, and storage requirements.
- Create a data collection and storage approach across all participating manufacturers, participating sites, and included buildings. Data collection is expected to encompass at least 2-weeks of pre-implementation and at least 2 weeks of post-implementation performance monitoring. This requires the ability to operate in a monitor only mode and then convert the equipment remotely to control and monitor.

⁵ The International Performance Measurement and Verification Protocol provides an overview of current best practices and techniques available for verifying results of energy efficiency, water efficiency, and renewable energy projects. <http://www.nrel.gov/docs/fy02osti/31505.pdf>

EXHIBIT A Scope of Work

- Implement the M&V Plan such as collect baseline performance data, collect post implementation performance data, and conduct parallel plug load metering at a sample of installations to verify native APMD device data collection accuracy.
- Perform M&V data cleaning, normalization, analysis, and presentation and develop *M&V Raw Data and Analysis Spreadsheets and Databases*.
- Evaluate data results, such as variations in base load, relative to equipment installed on each circuit, energy and demand reductions once control algorithms are activated, and relative performance of different APMDs on different end use loads.
- Project annual savings potential for each device, for each campus, and for all Community Colleges served by California IOUs and determine whether the projected energy savings identified in section II.C were met. Include all assumptions used in the projections.
- Create *Final M&V Report*.
- Prepare a *CPR Report #3* in accordance with subtask 1.3 (CPR Meetings).
- Participate in *CPR meeting #3*.

Products:

- M&V Plan (draft and final)
- M&V Raw Data and Analysis Spreadsheets and Databases
- ~~Final~~ M&V Report (draft and final)
- CPR Report #3

TASK 7: PARTICIPANT SATISFACTION INTERVIEWS AND SURVEYS

The goal of this task is to gather data related to the satisfaction of end-users with the installed APMD technology.

The Recipient shall:

- Prepare and conduct satisfaction interviews with participating sites' facilities and information technology staff and develop the *Facilities and Information Staff Satisfaction Surveys*. These would be completed 2 weeks to one month after installation of the APMD. They would be compiled and included as statistics in the Final Report. These interviews will be documented and will focus on the staff's experience with the overall installation process as well as the results of the installed technology. The staff will be asked to identify any issues with the process and the specific technology, as well as whether these issues were successfully resolved.
- Prepare and conduct satisfaction surveys with participating sites' end-users and prepare *End-user Satisfaction Surveys*. These surveys will use a standardized form, which will then be compiled and summarized in a results document. End-users will be asked to evaluate their satisfaction with the technology and its operation, as well as to identify any issues and whether these issues were successfully resolved.
- Troubleshoot significant outstanding issues found during satisfaction interviews and surveys with the assistance of the manufacturers and installers

Products:

- Facilities and Information Staff Satisfaction Surveys
- End-user satisfaction survey

EXHIBIT A Scope of Work

TASK 8: EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) *Kick-off Meeting Benefits Questionnaire*; (2) *Mid-term Benefits Questionnaire*; and (3) *Final Meeting Benefits Questionnaire*.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:
 - For Product Development Projects and Project Demonstrations:
 - Published documents, including date, title, and periodical name.
 - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
 - Greenhouse gas and criteria emissions reductions.
 - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
 - Additional Information for Product Development Projects:
 - Outcome of product development efforts, such copyrights and license agreements.
 - Units sold or projected to be sold in California and outside of California.
 - Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
 - Investment dollars/follow-on private funding as a result of Energy Commission funding.
 - Patent numbers and applications, along with dates and brief descriptions.
 - Additional Information for Product Demonstrations:
 - Outcome of demonstrations and status of technology.
 - Number of similar installations.
 - Jobs created/retained as a result of the Agreement.
 - For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.

EXHIBIT A Scope of Work

- An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
- An estimate of energy and non-energy benefits.
- Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
- A discussion of project product downloads from websites, and publications in technical journals.
- A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Respond to CAM questions regarding responses to the questionnaires.

The Energy Commission may send the Recipient similar questionnaires after the Agreement term ends. Responses to these questionnaires will be voluntary.

Products:

- Kick-off Meeting Benefits Questionnaire
- Mid-term Benefits Questionnaire
- Final Meeting Benefits Questionnaire

TASK 9: 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.

EXHIBIT A

Scope of Work

- Provide at least (6) six *High Quality Digital Photographs* (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: NEWCOMB ANDERSON MCCORMICK, 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 Amendment 1 to Agreement EPC-17-014 with Newcomb Anderson McCormick, Inc. to reduce the budget by \$3,735,704 due to a scope of work change to decrease the deployment size of advanced plug load management devices; 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 July 15, 2019.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite
Secretariat