

GRANT REQUEST FORM (GRF)New Agreement EPC-15-025 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
ERDD	Adel Suleiman	51	916-327-3313

Recipient's Legal Name	Federal ID Number
Home Energy Analytics, Inc.	77-0487404

Title of Project
Plug Load Reduction App:RYPL

Term and Amount	Start Date	End Date	Amount
	4/11/2016	12/31/2019	\$ 884,100

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

Proposed Business Meeting Date	3/9/2016	<input type="checkbox"/> Consent	<input checked="" 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

HOME ENERGY ANALYTICS INC. Proposed resolution approving agreement EPC-15-025 with Home Energy Analytics Inc. for a \$884,100 grant to develop technology to reduce home idle loads utilizing smart meter analytics and a smart phone app that will analyze the idle load of plug load devices in homes and provide recommendations to reduce it. (EPIC funding) Contact: Adel Suleiman

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 the activities funded by the agreement will not cause a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because they involve only computer software and applications. No physical modifications to buildings are funded by this project.
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: _____
 Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section: _____
- b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
 Check all that apply
 Initial Study Environmental Impact Report
 Negative Declaration Statement of Overriding Considerations
 Mitigated Negative Declaration

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

Legal Company Name:	Budget
Enervee Corporation	\$ 274,300
	\$
	\$

EXHIBIT A Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2	X	Develop and Deploy RYPL
3		Develop and Deploy Open PLDB
4		Evaluation of Project Benefits
5		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
CPUC	California Public Utilities Commission
EPIC	Electric Program Investment Charge
Idle Load	Continuous electric use (occurring in every smart meter interval), in Watts. Caused by power use by plug loads while in their inactive states.
MEL	Miscellaneous Electric Loads
PLDB	Plug Load Database: a new open crowd-sourced database of MELs
PG&E	Pacific Gas and Electric Company
RYPL	Proposed name of mobile application (Reduce Your Plug Loads)
SCE	Southern California Edison
SDG&E	San Diego Gas and Electric
TAC	Technical Advisory Committee
UnplugStuff	The recipient's existing Green Button application that identifies a home's idle load.
UX	User Experience, especially with respect to human-computer interaction

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

A. Purpose of Agreement

The purpose of this Agreement is to fund technology to help reduce residential idle loads in existing homes caused by inefficient idling plug loads.

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

Plug loads now make up nearly 60% of residential loads², and are predicted to account for 86% of residential energy growth between 2013 and 2026³. The associated high residential idle loads have been largely immune to statewide efficiency efforts. Consumer awareness of both the problem and the associated low- and no-cost solutions is minimal, and there is insufficient economic incentive to research & develop innovative methods to address this problem.

Traditional device-specific approaches have proved problematic due to the “long tail” of inefficient devices in existing homes: contributors to high idle loads vary tremendously from one home to the next. Finally, to date there has been very low participation in existing statewide energy efficiency programs: thousands are being reached, but it needs to reach millions.

Solution

The Recipient will develop an engaging and free mobile app that will analyze a home’s idle load using smart meter data, help the user identify an inventory of the specific causes, and provide recommendations to reduce it. Continuous monitoring of results will answer research questions posed during each phase, quantify the direct savings, inform new research areas, and enable continuous improvement of user adoption and efficacy during the program.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to reduce residential idle loads.

Ratepayer Benefits:⁴ This Agreement will result in the ratepayer benefit of lower costs by reducing energy waste from idling plug loads. This will be accomplished through ratepayer education, behavioral changes, and plug load replacements customized to each home.

Technological Advancement and Breakthroughs:⁵ 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 leveraging the Recipient’s new smart meter infrastructure, applying proven comparative norming methods and engaging mobile application technologies to characterize and mitigate the growing problem of residential plug load energy use. Continuous monitoring will provide rapid feedback on areas of research throughout the program.

Agreement Objectives

The objective of this Agreement is to develop, deploy, and assess the efficacy of a software-based, residential idle load reduction tool.

² CEC presentation (15-IEPR): Status_of_PlugLoad_Efforts.ppt

³ CEC presentation (15-IEPR): Plug_Loads_in_the_Residential_and_Commercial_Forecasts.pptx

⁴ 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).

⁵ 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.

EXHIBIT A

Scope of Work

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

EXHIBIT A

Scope of Work

cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the Energy Commission, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Recipient shall:

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

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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.

EXHIBIT A Scope of Work

- 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 and approve the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Style Manual, and Final Report Template provided by the CAM with the following considerations:
 - Ensure that the report includes the following items, in the following order:
 - Cover page (**required**)
 - Credits page on the reverse side of cover with legal disclaimer (**required**)
 - Acknowledgements page (optional)
 - Preface (**required**)
 - Abstract, keywords, and citation page (**required**)
 - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
 - Executive summary (**required**)
 - Body of the report (**required**)
 - References (if applicable)

EXHIBIT A

Scope of Work

- Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
- Bibliography (if applicable)
- Appendices (if applicable) (Create a separate volume if very large.)
- Attachments (if applicable)
- Ensure that the document is written in the third person.
- Ensure that the Executive Summary is understandable to the lay public.
 - Briefly summarize the completed work. Succinctly describe the project results and whether or not the project goals were accomplished.
 - Identify which specific ratepayers can benefit from the project results and how they can achieve the benefits.
 - If it's necessary to use a technical term in the Executive Summary, provide a brief definition or explanation when the technical term is first used.
- Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
- Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.
- Include a brief description of the project results in the Abstract.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt
- Consider incorporating all CAM comments into the Final Report. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product
- Submit the revised Final Report and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period or approves a request for additional time.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

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

CAM Product:

- Written Comments on the Draft Final Report
- Approval of 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.

EXHIBIT A Scope of Work

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

The Recipient shall:

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

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

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

Products:

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

Subtask 1.8 Permits

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

EXHIBIT A Scope of Work

The Recipient shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
 - The schedule the Recipient will follow in applying for and obtaining the permits.
- The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
 - Send the CAM a *Copy of Each Approved Permit*.
 - If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

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

Subtask 1.9 Subcontracts

The goals of this subtask are to: (1) procure subcontracts required to carry out the tasks under this Agreement; and (2) ensure that the subcontracts are consistent with the terms and conditions of this Agreement.

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subcontract.
- Include any required Energy Commission flow-down provisions in each subcontract, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subcontract terms.
- If required by the CAM, submit a draft of each *Subcontract* required to conduct the work under this Agreement.
- Submit a final copy of the executed subcontract.
- Notify and receive written approval from the CAM prior to adding any new subcontractors (see the discussion of subcontractor additions in the terms and conditions).

Products:

- Subcontracts (*draft if required by the CAM*)

EXHIBIT A Scope of Work

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

The goal of this subtask is to create an advisory committee for this Agreement. The TAC should be composed of diverse professionals. The composition will vary depending on interest, availability, and need. TAC members will serve at the CAM's discretion. The purpose of the TAC is to:

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
 - Technical area expertise;
 - Knowledge of market applications; or
 - Linkages between the agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.

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

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

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, 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.

EXHIBIT A

Scope of Work

Products:

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

Subtask 1.11 TAC Meetings

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

The Recipient shall:

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

Products:

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

EXHIBIT A

Scope of Work

IV. TECHNICAL TASKS

TASK 2 DEVELOP AND DEPLOY RYPL

The goal of this task is to develop and deploy a mobile software application to investigate methods to first educate residents about their home idle load and then help them reduce it.

This task is divided into subtasks that represent major releases of new functionality added to the interactive Reduce Your Plug Loads (RYPL) tool. Each release/subtask will investigate user reactions to key research topics related to outreach methods (which promote adoption of the tool) and engagement methods (which improve the efficacy of the tool). These releases are sequenced so that feedback results from prior releases will inform the research and feature sets of subsequent releases. For each “Final” Release Report for the subtask below are designed to coincide with public availability of that version, allowing the CAM and members of the TAC to test the actual tool while reviewing these reports.

Subtask 2.1 Web Browser Version of RYPL Supporting 3 Investor Owned Utilities (IOUs)

The goal of this subtask is to develop and deploy an initial browser-based version of the RYPL application with the core functionality of utility data collection and analysis, and then collect feedback from users on the efficacy of different outreach and user experience (UX) approaches. This version will be available to users who do not have smart phones with which to run the mobile RYPL app.

The Recipient shall:

- Design the RYPL tool and UX, using the Recipient’s existing UnplugStuff application as a starting point, and identify the key research areas of UX design and outreach methods to be tested with this version.
- Prepare and provide a *V1 Release Report* that includes but is not limited to the following:
 - Design specification including core functionality of this release;
 - A marketing/outreach plan to promote adoption of this version to the target population; and
 - A set of research goals for this version.
- Implement the browser-based version of RYPL, leveraging the existing integrations of UnplugStuff with the Green Button Connect My Data services from PG&E, SCE and SDG&E.
- Track user feedback and energy savings efficacy (if sufficient data exists) from this version throughout the period when it is deployed and prepare and provide a *V1 Usage Report* that includes but is not limited to the following:
 - Number of users over the period deployed;
 - Feedback from users specific to this version; and
 - Measured idle load savings by users of this version; and
 - Any conclusions reached related to the research goals of this version.

Products:

- V1 Release Report (draft and final)
- V1 Usage Report

EXHIBIT A

Scope of Work

Subtask 2.2 Mobile Version of RYPL

The goal of this subtask is to develop and deploy an initial mobile (smart phone) based version of the RYPL application with all the core functionality of the browser-based version, and then collect feedback from users on the efficacy of different outreach and UX approaches. The UX approaches will include those specifically enabled by the mobile form factor (e.g., “swiping” plug load images left or right to quickly build a plug load inventory for a home).

The Recipient shall:

- Design the mobile RYPL tool and UX and identify the key research areas of UX design and outreach methods to be tested with this version.
- Prepare and provide a *V2 Release Report* that includes but is not limited to the following:
 - Design specification including core functionality of this release;
 - A marketing/outreach plan to promote adoption of this version to the target population; and
 - A set of research goals for this version.
- Implement the mobile version of RYPL.
- Track user feedback and energy savings efficacy (if sufficient data exists) from this version throughout the period when it is deployed and prepare and provide a *V2 Usage Report* that includes but is not limited to the following:
 - Number of users over the period deployed;
 - Feedback from users specific to this version; and
 - Measured idle load savings by users of this version; and
 - Any conclusions reached related to the research goals of this version.

Products:

- V2 Release Report (draft and final)
- V2 Usage Report

Subtask 2.3 Mobile Version with Marketplace

The goal of this subtask is to develop and deploy an updated version of the RYPL application integrated with an online marketplace of efficient consumer electronic devices (provided by Enervee) and investigate the impacts of this addition.

The Recipient shall:

- Design the updated RYPL tool and UX and identify the key research areas of UX design and outreach methods to be tested with this version.
- Prepare and provide a *V3 Release Report* that includes but is not limited to the following:
 - Design specification including core functionality of this release;
 - A marketing/outreach plan to promote adoption of this version to the target population; and
 - A set of research goals for this version.
- Implement the mobile version of RYPL integrated with the online marketplace.
- Track user feedback and energy savings efficacy (if sufficient data exists) from this version throughout the period when it is deployed and prepare and provide a *V3 Usage Report* that includes but is not limited to the following:
 - Number of users over the period deployed;
 - Feedback from users specific to this version;
 - Measured idle load savings by users of this version; and
 - Any conclusions reached related to the research goals of this version.

EXHIBIT A

Scope of Work

Products:

- V3 Release Report (draft and final)
- V3 Usage Report

Subtask 2.4 Mobile Version with Text-Based Explorer

The goal of this subtask is to develop and deploy an updated version of the RYPL application that includes a text-based method (“Explorer”) allowing a user to create an inventory of plug loads that make up their home’s idle load, and investigate the impacts of this addition.

The Recipient shall:

- Design the updated RYPL tool and UX and identify the key research areas of UX design and outreach methods to be tested with this version. This may include plug load measurement devices for completing the idle load inventory.
- Prepare and provide a *V4 Release Report* that includes but is not limited to the following:
 - Design specification including core functionality of this release;
 - A marketing/outreach plan to promote adoption of this version to the target population; and
 - A set of research goals for this version.
- Implement the text based plug load Explorer functionality into the existing RYPL app.
- Track user feedback and energy savings efficacy (if sufficient data exists) from this version throughout the period when it is deployed and prepare and provide a *V4 Usage Report* that includes but is not limited to the following:
 - Number of users over the period deployed;
 - Feedback from users specific to this version; and
 - Measured idle load savings by users of this version; and
 - Any conclusions reached related to the research goals of this version.

Products:

- V4 Release Report (draft and final)
- V4 Usage Report

Subtask 2.5 Mobile Version with Image-Based Explorer

The goal of this subtask is to develop and deploy an updated version of the RYPL “Explorer” feature that allows users to photograph their plug loads with their smart phone to build up their idle load inventory, and to investigate the impacts of this addition.

The Recipient shall:

- Design the updated image-based Explorer feature and UX and identify the key research areas of UX design and outreach methods to be tested with this version.
- Prepare and provide a *V5 Release Report* that includes but is not limited to the following:
 - Design specification including core functionality of this release;
 - A marketing/outreach plan to promote adoption of this version to the target population; and
 - A set of research goals for this version.
- Implement the mobile version of RYPL integrated with the online marketplace.
- Track user feedback and energy savings efficacy (if sufficient data exists) from this version throughout the period when it is deployed and prepare and provide a *V5 Usage Report* that includes but is not limited to the following:
 - Number of users over the period deployed;

EXHIBIT A

Scope of Work

- Feedback from users specific to this version; and
- Measured idle load savings by users of this version; and
- Any conclusions reached related to the research goals of this version.
- Participate in CPR per Task 1.3

Products:

- V5 Release Report (draft and final)
- V5 Usage Report
- CPR Report

TASK 3 DEVELOP AND DEPLOY OPEN PLDB

The goal of this task is to develop and deploy a crowd-sourced, open, cloud-based database of plug loads that includes their associated standby power use in watts. The Plug Load Database (PLDB) will enable users of the RYPL app (and other third party apps) to quickly and easily build an inventory of their existing plug loads and understand each device's contribution to their home's idle load.

The Recipient shall:

- Design the PLDB database and prepare and provide a *PLDB Specification* that includes but is not limited to the following:
 - A description of the PLDB metadata and supported functions;
 - A description of the PLDB infrastructure platform;
 - A description of the third party web interfaces supported;
 - A description of data maintenance requirements; and
 - Example use cases for the open PLDB database.
- Implement the PLDB database and populate it with preliminary data from existing data sources (e.g. the National Resources Defense Council Plug Load report).
- Integrate the PLDB database with the RYPL tool.
- Develop procedure(s) to measure detailed plug load information via in-home visits in order to supplement the PLDB data with additional information and prepare an *In-Home Plug Load Monitoring Report* documenting the procedures developed using these EPIC program funds.

Products:

- PLDB Specification (draft and final)
- In-Home Plug Load Monitoring Report

TASK 4 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

EXHIBIT A

Scope of Work

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.
 - An estimate of how the project information has affected energy use and cost, or has 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 5 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 on the results of 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.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

EXHIBIT A Scope of Work

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: HOME ENERGY ANALYTICS, 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-15-025 from GFO-15-310 with Home Energy Analytics, Inc. for a \$884,100 grant to develop technology to reduce home idle loads utilizing smart meter analytics and a smart phone app that will analyze the idle load of plug load devices in homes and provide recommendations to reduce it; 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 March 9, 2016.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Tiffani Winter,
Secretariat