



California
ENERGY COMMISSION



**California Energy Commission
August 17, 2026 Business Meeting
Backup Materials for Central California Asthma Collaborative (CCAC)**

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Grant Request Form
3. Scope of Work

CALIFORNIA ENERGY COMMISSION

PROPOSED RESOLUTION: Central California Asthma Collaborative (CCAC)

RESOLUTION NO: 26-0817-XX

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

RESOLVED, that the CEC approves Agreement EPC-26-006 with the Central California Asthma Collaborative (CCAC) for a \$600,000 grant to fund follow-on work associated with the Cooking Energy and Ventilation Impacts on Children with Asthma (CEVICA) study. The follow-on project builds upon the ongoing CEVICA study by leveraging the existing participant cohort, field infrastructure, and data collected under the original agreement to generate additional policy-relevant research. Research conducted under this agreement will further investigate the relationships between cooking, ventilation and indoor air quality (IAQ); impacts of a real-time IAQ intervention to modify range hood use during fine particulate matter-generating cooking events; and consumer (low-income households) perceptions and experiences of switching from gas to induction electric cooking. The project is eligible for follow-on funding under Public Resources Code Section 25711.5(h)(4); and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

APPROVED AND ADOPTED this 17 day of August 2026, by the following vote:

AYE:

NAY:

ABSENT:

ABSTAIN:

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly approved and adopted by affirmative vote of the CEC at a meeting held on August 17, 2026.

Kim Todd
Secretariat



GRANT REQUEST FORM (GRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: EPC-26-006

B. Division Information

1. Division Name: ERDD
2. Agreement Manager: Maninder Thind
3. MS-:51
4. Phone Number: 916-776-0819

C. Recipient's Information

1. Recipient's Legal Name: Central California Asthma Collaborative

D. Title of Project

Title of project: Cost, Energy and Indoor Air Quality Impacts of Cooking Technology & Ventilation Choices in California Homes: The CEVICA Follow-On Study

E. Term and Amount

1. Start Date:8/17/2026
2. End Date: 6/30/2028
3. Amount: \$600,000.00

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 8/17/2026
3. Consent or Discussion? Consent
4. Business Meeting Presenter Name: Maninder Thind
5. Time Needed for Business Meeting: N/A.
6. The email subscription topic is: Electric Program Investment Charge (EPIC)

Project Description:

Central California Asthma Collaborative. Proposed resolution approving agreement EPC-26-006 with the Central California Asthma Collaborative (CCAC) for a \$600,000 grant to fund follow-on work associated with the Cooking Energy and Ventilation Impacts on Children with Asthma (CEVICA) study and adopting staff's determination that this action is exempt from CEQA. The follow-on project builds upon the ongoing, EPIC-funded CEVICA study by leveraging the existing participant cohort, field infrastructure, and data collected under the original agreement to generate additional policy-relevant research. Research conducted under this agreement will further investigate the relationships between cooking, ventilation and indoor air quality (IAQ); impacts of a real-time IAQ intervention to modify range hood use during fine particulate matter-generating cooking events; and consumer (low-income households) perceptions and experiences of switching from gas to induction electric cooking. The project is eligible for follow-on funding under Public Resources Code Section 25711.5(h)(4). (EPIC funding) Contact: Maninder Thind



G. California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a “Project” under CEQA?

Yes

If yes, skip to question 2.

If no, complete the following (PRC 21065 and 14 CCR 15378) and explain why Agreement is not considered a “Project”:

Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because:

2. If Agreement is considered a “Project” under CEQA answer the following questions.

a) Agreement **IS** exempt?

Yes

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

Yes

If yes, list CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

CCR section number: Cal. Code Regs., tit. 14, § 15301 ; Cal. Code Regs., tit. 14, § 15306 ;

Common Sense Exemption? 14 CCR 15061 (b) (3)

No

If yes, explain reason why Agreement is exempt under the above section. If no, enter “Not applicable” and go to the next section.

This research work consists of basic data collection, research, experimental management, and resource evaluation activities which do not result in serious or major disturbance to an environmental resource. This project is exempt because this is a research project that involves measurement of indoor air quality, data analysis, and rangehood intervention in the households of under-resourced communities of California. For these reasons, the proposed research project will have no significant effect on the environment and is categorically exempt.



b) Agreement **IS NOT** exempt.

IMPORTANT: consult with the legal office to determine next steps.

No

If yes, answer yes or no to all that applies. If no, list all as “no” and “None” as “yes”.

Additional Documents	Applies
Initial Study	No
Negative Declaration	No
Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

H. Is this project considered “Infrastructure”?

No

I. Subcontractors

List all Subcontractors listed in the Budget (s) (major and minor). Insert additional rows if needed. If no subcontractors to report, enter “No subcontractors to report” and “0” to funds.

Delete any unused rows from the table.

Subcontractor Legal Company Name	CEC Funds	Match Funds
The Regents of the University of California, on behalf of the Berkeley campus	\$ 290,000	\$0
Stephanie Holm Consulting	\$ 10,000	\$0

J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter “No vendors or sellers to report” and “0” to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
No vendors to report	\$	\$

K. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter “No key partners to report.” **Delete** any unused rows from the table.

Key Partner Legal Company Name
No key partners to report



L. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter "N/A" for "Not Applicable" and "0" to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	25-26	301.001M	\$ 600,000

TOTAL Amount: \$ 600,000

R&D Program Area: Admin: Environmental & Social Research

Explanation for "Other" selection Not applicable

Reimbursement Contract #: Not applicable

Federal Agreement #:

M. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Tim Tyner

Address: 1939 N Gateway Blvd

City, State, Zip: Fresno, CA 93727-1605

Phone: 559-272-4874

E-Mail: tim.tyner@centralcalasthma.org

2. Recipient's Project Manager

Name: Tim Tyner

Address: 1939 N Gateway Blvd

City, State, Zip: Fresno, CA 93727-1605

Phone: 559-272-4874

E-Mail: tim.tyner@centralcalasthma.org

N. Selection Process Used

There are three types of selection process. List the one used for this GRF.

Selection Process	Additional Information
Competitive Solicitation #	Not applicable
First Come First Served Solicitation #	Not applicable
Other	Follow-on funding



O. Attached Items

1. List all items that should be attached to this GRF by entering "Yes" or "No".

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	No
5	Awardee CEQA Documentation	Yes

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Maninder Thind

Approval Date: 6/30/2026

Branch Manager: Angela Gould for Alex Horangic

Approval Date: 07/02/2026

Director: Angela Gould for Jonah Steinbuck

Approval Date: 07/02/2026

Exhibit A
Scope of Work
Central California Asthma Collaborative

I. TASK AND ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Additional Analysis of CEVICA Data
3	X	Range Hood Use Intervention Based on Real-Time Cooking Emissions
4		Costs and Perceived Barriers to Switching from Gas to Electric Cooking
5		Evaluation of Project Benefits
6		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CCAC	Central California Asthma Collaborative
CEC	California Energy Commission
CEVICA	Cooking Energy and Ventilation Impacts on Children with Asthma
CPR	Critical Project Review
IAQ	Indoor Air Quality
LBNL	Lawrence Berkeley National Lab
NO ₂	Nitrogen Dioxide
PM _{2.5}	Fine Particulate Matter
TAC	Technical Advisory Committee
UCB	University of California, Berkeley

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

A. Purpose of Agreement

The purpose of this Agreement is to fund follow-on work associated with the Cooking Energy and Ventilation Impacts on Children with Asthma (CEVICA) study. The CEVICA follow-on study will support the State's near-term priorities of addressing equity and energy affordability issues related to California's decarbonizing energy system, while striving to improve health outcomes in low-income, hard-to-reach communities. Research conducted under this agreement will further investigate the relationships between cooking, ventilation and indoor air quality (IAQ); impacts of a real-time IAQ intervention to modify (increase) range hood use during fine particulate matter-generating cooking events; and consumer (low-income households) perceptions and experiences of switching from gas to induction electric cooking.

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

Central California Asthma Collaborative

B. Problem/ Solution Statement

Problem

The CEVICA study was designed to support statewide energy and air quality policy goals by conducting a randomized control trial to analyze the indoor air quality impacts and associated health effects (children's asthma symptoms and lung function) of replacing gas stoves with induction electric in homes of low-income households that cook frequently.

While preliminary results demonstrated significant reductions in NO₂ associated with stove electrification, cooking-related PM_{2.5} was not significantly different in households using gas vs induction electric stoves. Further, preliminary data suggests that range hoods were used less than 40% of the time during cooking events that had coincident PM_{2.5} events.

Adoption of induction electric stoves in low-income households and disadvantaged communities is an important equity consideration of California's clean energy transition. The CEVICA study was not designed to collect and analyze data from households that declined to participate in the study. However, several non-participants mentioned their concern about switching from gas to electric cooking, with a typical reason being higher electricity costs. Others noted that cooking on an induction stove wouldn't be as practical or efficacious as cooking on their gas stove. Also, while CEVICA included a satisfaction survey of participants who switched from gas to induction electric, it did not assess participants' electricity use perceptions (pre-intervention) compared to their actual experiences (post-intervention).

Solution

The CEVICA follow-on study will support the State's near-term priorities of addressing equity and energy affordability issues related to California's decarbonizing energy system, while striving to improve health outcomes in low-income, hard-to-reach communities. The follow-on study will expand upon the data collection and findings of the CEVICA study to address the above problems that fell outside the scope of the original CEVICA protocol.

The follow-on study will:

- 1- analyze existing CEVICA data collected during to answer questions related to cooking, ventilation and IAQ that were beyond the scope of the original study;
- 2- investigate the impacts of a real-time PM_{2.5} monitor/display intervention of range hood use during cooking, focusing on households that participated in CEVICA and were observed to not routinely use their range hoods during cooking events with coincident particle increases;
- 3- document the perceptions and experiences of CEVICA participants and non-participants, through qualitative and quantitative questionnaires.

To accomplish these three tasks at relatively low cost, the follow-on study will leverage:

- 1- analytical capacity of researchers from the CEVICA project who are currently preparing and analyzing time-resolved measurements of indoor air pollutants and appliance usage for the CEVICA study;
- 2- infrastructure for recruitment and field work that were established for the original CEVICA study, including staff from CCAC who do the recruiting and field visits, as well as monitoring equipment deployed by CCAC;
- 3- relationships with previous CEVICA participants, as well as the recent engagement of low-income households with asthma who declined to participate in CEVICA, to glean valuable perspective from both program participants and non-participants.

Exhibit A

Scope of Work

Central California Asthma Collaborative

These three tasks will deliver rigorous scientific findings and valuable information about the challenges of implementing cooking electrification and ventilation and other exposure reduction interventions. Findings will be communicated to both technical and non-technical audiences. Non-technical audiences include healthy homes implementers and program administrators, weatherization and other building retrofit contractors, community-based organizations and advocacy groups promoting decarbonization and/or affordable housing.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to leverage and expand the goals of the original CEVICA study to further engage a hard-to-reach population and generate additional data and findings from this cohort who have switched from gas to electric cooking to help inform CEC's equity considerations related to residential building decarbonization.

Ratepayer Benefits:² This Agreement will result in an indirect ratepayer benefit of lower costs by hastening adoption of induction electric stoves and increasing use of ventilation range hoods during cooking events.

Successful demonstration of the benefits of induction cooking will hasten consumer adoption. Induction currently only makes up 15% of the electric cooktop/range market (AHAM, 2017). CALMAC (2001) reported that 9% of California's homes are remodeled each year, of which 64% who completed a remodeling project included the remodeling of a kitchen, and 69% of those asked about kitchen remodeling replaced the oven. This translates to 560,000 California homes that could be retrofitted with an induction stove, or with other appliances that can help mitigate exposure to cooking-related emissions. In addition to the increased market for induction ranges, there will be a need for local contractors to provide home upgrades to electrical service as necessary, and to install kitchen ventilation equipment.

There is a large potential for cost savings if childhood asthma prevalence and emergency healthcare utilization can be reduced through electrification and other exposure mitigation interventions, like increased range hood use. The CEVICA study assessed the potential health benefits of stove electrification (reduced NO₂ exposure). The follow-on study will assess the potential health benefits of an intervention to reduce cooking-related PM_{2.5} by increasing range hood use.

Technological Advancement and Breakthroughs:³ This Agreement will support technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by collecting new data and conducting an objective analysis of costs, consumer perceptions and desirability, and indoor air quality impacts associated with

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.

Exhibit A Scope of Work Central California Asthma Collaborative

replacing gas stoves with induction electric in existing homes of low-income households that cook frequently.

Agreement Objectives

The objectives of this Agreement are to:

- Leverage existing data collected during the CEVICA study to analyze and answer important questions not included in the original proposal (see Task 2).
- Leverage the existing CEVICA cohort and research infrastructure to implement a real-time IAQ intervention to modify (increase) range hood use during PM_{2.5}-generating cooking events (see Task 3).
- Leverage the existing CEVICA cohort and non-participants (low-income households of children with asthma who declined to enroll in the study due to concerns of switching from gas induction electric cooking) to document and analyze their perceptions and concerns of switch to induction electric cooking; CEVICA participants will also be asked about the experience and satisfaction of switching from gas to induction electric cooking (see Task 4)

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)**. All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations. All technical tasks should include product(s). 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.

Exhibit A Scope of Work Central California Asthma Collaborative

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 California Energy Commission's (CEC) 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.

The following describes the accepted formats for electronic data and documents provided to the CEC 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.
- 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 CEC's Information Technology Services Branch to determine whether the exceptions are allowable.

Exhibit A Scope of Work Central California Asthma Collaborative

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, and other CEC staff relevant to the Agreement. The Recipient’s Project Manager and any other individuals deemed necessary by the CAM or the Project Manager shall participate in 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., Teams, Zoom), with approval of the CAM.

The Kick-off meeting will include discussion of the following:

- The CAM’s expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Terms and conditions of the Agreement;
 - Invoicing and auditing procedures;
 - Travel;
 - Equipment purchases;
 - Administrative and Technical products (subtask 1.1);
 - CPR meetings (subtask 1.3);
 - Monthly Calls (subtask 1.5)
 - Quarterly Progress reports (subtask 1.6)
 - Final Report (subtask 1.7)
 - Match funds (subtask 1.8);
 - Permit documentation (subtask 1.9);
 - Subawards(subtask 1.10);
 - Technical Advisory Committee meetings (subtasks 1.11 and 1.12);
 - Agreement changes;
 - Performance Evaluations; and
 - Any other relevant topics.
- Provide *Kick-off Meeting Presentation* to include but not limited to:
 - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
 - Project schedule that identifies milestones
 - List of potential risk factors and hurdles, and mitigation strategy
 - Provide an *Updated Project Schedule, Match Funds Status Letter, and Permit Status Letter*, 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:

- Kick-off Meeting Presentation

Exhibit A

Scope of Work

Central California Asthma Collaborative

- Updated Project Schedule (*if applicable*)
- Match Funds Status Letter (subtask 1.8) (*if applicable*)
- Permit Status Letter (subtask 1.9) (*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 CEC funding and, if so, whether any modifications should be made to the tasks, products, schedule, or budget. CPR meetings are a key opportunity for open and candid discussions between the CEC and the Recipient about project progress, challenges, and next steps. CPR meetings may also provide a forum for the Recipient to share project insights with interested CEC staff and CEC partners, at the CAM's discretion.

CPR meetings are typically scheduled at key inflection points in the project, as identified in the Task List on page 1 of this Exhibit. They should align with natural phase transitions, such as after design completion but before major procurement decisions, so that the CEC can make an informed Progress Determination based on project performance and risk. CPR meetings are generally conducted virtually but may be held at a project site, at the CEC, or another location, as determined by the CAM. Site visits are typical for demonstration projects or when in-person observation would enhance the CEC's understanding of project progress.

The CAM may schedule additional CPR meetings as needed to address emerging issues or concerns. The budget may be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase.

The Recipient shall:

- Prepare and submit a *CPR Presentation* for each CPR meeting, structured to (1) report on progress with respect to the Scope of Work, budget, and schedule; identify any risks or needed changes to the Agreement; provide justification for continued funding; and (2) share project insights and progress towards achieving the Agreement's goals and objectives.
Attend the CPR meeting and deliver the *CPR Presentation* and any other requested material, as outlined in the *CPR Agenda* provided by the CAM.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient's input.
- Send the Recipient a *CPR Agenda* with a list of expected CPR participants in advance of the CPR meeting. The *CPR Agenda* will outline the structure and expectations for the *CPR Presentation*.
- Conduct each CPR meeting.
- Issue a *Progress Determination* summarizing the meeting, stating whether the project will continue, and identifying any potential modifications to the Agreement or its products. The *Progress Determination* may include conditions that the Recipient must meet for the project to continue to receive CEC funding.

Recipient Products:

- CPR Presentation(s)

Exhibit A

Scope of Work

Central California Asthma Collaborative

CAM Products:

- CPR Agenda(s)
- Progress Determination(s)

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM of the following Agreement closeout items:
 - Disposition of any procured equipment.
 - The CEC'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 copies of *All Final Products* organized by the tasks in the Agreement.

Products:

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

MONTHLY CALLS, REPORTS AND INVOICES

Subtask 1.5 Monthly Calls

The goal of this task is to have calls at least monthly between the CAM and Recipient to verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

Exhibit A

Scope of Work

Central California Asthma Collaborative

The objectives of this task are to verbally summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted or the CAM determines that a monthly call is unnecessary.

The CAM shall:

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during call.

The Recipient shall:

- Review the questions provided by CAM prior to the monthly call
- Provide verbal answers to the CAM during the call.

Product:

- Email to CAM concurring with call summary notes.

Subtask 1.6 Quarterly 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 *Quarterly 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 reporting period, 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. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at: <https://www.energy.ca.gov/media/4691>
- Submit a monthly or quarterly *Invoice* on the invoice template(s) provided by the CAM.

Recipient Products:

- Quarterly Progress Reports
- Invoices

CAM Product:

- Invoice template

Subtask 1.7 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.

Exhibit A Scope of Work Central California Asthma Collaborative

When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.7.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Energy Commission Style Manual* provided by the CAM.

Recipient Products:

- Final Report Outline (draft and final)

CAM Products:

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

Subtask 1.7.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission 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)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments on Draft Final Report* received on the Executive Summary. For each comment received, the Recipient will identify in the summary the following:
 - Comments the Recipient proposes to incorporate.
 - Comments the Recipient does not propose to incorporate and an explanation for why.
- 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.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any

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comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.

- Submit the revised *Final Report* electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

- Summary of TAC Comments on Draft Final Report
- Draft Final Report
- Written Responses to Comments (*if applicable*)
- Final Report

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBAWARDS

Subtask 1.8 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. 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 application that led to the CEC 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 application that led to the CEC awarding this Agreement, then provide in the letter:

- A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
 - If different from the solicitation application, provide a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.

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- 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 1.9 Permits

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

The Recipient shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this Agreement. If no permits are required at the start of this Agreement, then state this in the letter. If permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies: (1) the type of permit; and (2) the name, address, and telephone number of the permitting jurisdictions or lead agencies.
 - The schedule the Recipient will follow in applying for and obtaining the permits.

The list of permits and the schedule for obtaining them will be discussed at the Kick-off meeting (subtask 1.2), and a timetable for submitting the updated list, schedule, and copies of the permits will be developed. The impact on the project if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in progress reports and will be a topic at CPR meetings.

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

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

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Subtask 1.10 Obtain and Execute Subawards and Agreements with Site Hosts

The goals of this subtask are to: (1) procure and execute subrecipients and site host agreements, as applicable, required to carry out the tasks under this Agreement; and (2) ensure that the subrecipients and site host agreements are consistent with the Agreement terms and conditions and the Recipient's own contracting policies and procedures.

The Recipient shall:

- Execute and manage subawards and coordinate subrecipients activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subaward.
- Include any required Energy Commission flow-down provisions in each subaward, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subaward terms.
- Submit a *Subaward and Site Letter* to the CAM describing the subawards and any site host agreement needed or stating that no subawards or site host agreements are required. *For this agreement, Recipient shall submit evidence that the owners or occupants, as applicable, for all homes involved in this Agreement have consented to the project activities being performed therein.*
- If requested by the CAM, submit a draft of each *Subaward* and any *Site Host Agreement* required to conduct the work under this Agreement.
- If requested by the CAM, submit a final copy of each executed *Subaward* and any *Site Host Agreement*.
- Notify and receive written approval from the CAM prior to adding any new subrecipient (see the terms regarding subrecipient additions in the terms and conditions).

Products:

- Subaward and Site Letter
- Draft Subawards (*if requested by the CAM*)
- Draft Site Host Agreement (*if requested by the CAM*)
- Final Subawards (*if requested by the CAM*)
- Final Site Host Agreement (*if requested by the CAM*)

TECHNICAL ADVISORY COMMITTEE

Subtask 1.11 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 Recipient will leverage the existing CEVICA Technical Advisory Committee (TAC), as appropriate, to present follow-on study activities and findings, obtain feedback on technical approaches and research priorities, and facilitate knowledge transfer to relevant stakeholders.* 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.

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- 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.
- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate, to the extent the TAC members feel is appropriate, on behalf of the project in its effort to build partnerships, governmental support, and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.

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 1.12.
- 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

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Subtask 1.12 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* for each TAC Meeting that include any recommended resolutions of major TAC issues.

The TAC shall:

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that ensure a long-term perspective on decision-making and progress toward the project's strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

Products:

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

Subtask 1.13 Project Performance Metrics

The goal of this subtask is to finalize key performance targets for the project based on feedback from the TAC and report on final results in achieving those targets. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

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The Recipient shall:

- Complete and submit the project performance metrics section of the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task, to the CAM.
- Present the draft project performance metrics at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
 - TAC comments the Recipient proposes to incorporate into the *Initial Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
 - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the Recipient met each of the performance metrics in the *Final Project Benefits Questionnaire*, developed in the Evaluation of Project Benefits task.
- Discuss the *Project Performance Metrics Results* at the Final Meeting.

Products:

- TAC Performance Metrics Summary
- Project Performance Metrics Results

IV. TECHNICAL TASKS

TASK 2 ADDITIONAL ANALYSIS OF EXISTING CEVICA DATA

The goal of this task is to leverage existing data collected during the CEVICA study to better understand the relationship between cooking, ventilation and IAQ.

The Recipient shall:

- Digitize CEVICA participant cooking logs.
- Conduct quality assurance (QA) review and cleaning of additional sensor data from CEVICA homes, including:
 - Cooking and range hood use data for Phase 1. The research team will, after some preliminary consideration, propose to CAM whether to do it for all homes for Phase 1 or for a subset for full monitoring period.
 - Supplemental sensor data portraying window, air cleaner, and forced air system use.
- Conduct analysis of CEVICA data and prepare a *Manuscript #1* summarizing the study findings for submission to a peer-reviewed journal
 - The expanded dataset will allow us to conduct analyses to address additional questions, for example:
 - How does measured cooking frequency compare to what participants self-reported during the initial questionnaire?
 - What are the frequencies of various cooking activities (frying, baking, etc.), as recorded by logs?
 - How does measured range hood use compare to what was self-reported during the initial questionnaire?

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- Is range hood use impacted by the type of cooking, as recorded by written log?
- Is actual range hood use associated with the measured sound levels or the perceived effectiveness?
- Is there any evidence that the participants opened windows to mitigate high PM_{2.5} levels from cooking?
- Are cooking-related PM decay rates higher when windows are open? Are decay rates increased when the central forced air system (which includes a filter) operates?
- Did the change in cooking fuel impact use of the portable air cleaner in the child's bedroom?
- Do children's bedrooms with a portable air cleaner operating have lower PM_{2.5} from cooking relative to those without a portable air cleaner operating?
- How do PM peaks and integrated concentrations vary with cooking method (frying, baking, etc.)?
- Did the cooking ventilation education following baseline change range hood use in the weeks following? Did it change after the reminder at the end of the first intensive? Was range hood use different during intensives than non-intensive periods?
- Prepare a *Presentation#1* summarizing the Task 2 study findings, key conclusions, and implications for research, policies, and programs in a format suitable for technical and non-technical audiences.

Products:

- Manuscript #1
- Presentation #1

TASK 3: RANGE HOOD USE INTERVENTION BASED ON REAL-TIME COOKING EMISSIONS

This task will leverage the infrastructure and relationships established by the CEVICA study to support recruitment and field work. The goal of this task is to conduct a trial intervention to investigate whether real-time feedback on PM_{2.5} during cooking leads to increased range hood use.

The Recipient shall:

- Recruit (including obtaining consent) up to 30 households that completed the CEVICA study and still have their electric ranges, prioritizing those who had higher frequencies of PM_{2.5} events associated with cooking *and* lower rates of range hood use during such PM_{2.5} events.
- Install PM_{2.5} monitors to collect data over a two-week baseline period and for an additional four weeks after providing the intervention.
 - All PM_{2.5} monitors will be cross calibrated with a reference grade PM_{2.5} prior to deployment.
 - PM_{2.5} monitors will be installed both outside and inside the home:
 - Inside the home, measurements will be made in four locations:
 - Kitchen countertop, adjacent to the stovetop
 - Indicator displaying real-time PM_{2.5} AQI colors
 - Higher point in the kitchen

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- Capture PM_{2.5} from plumes that could initially bypass the countertop monitor by rising faster than they mix horizontally
 - Same central location where IAQ measurements were previously collected for CEVICA
 - Child's bedroom, where feasible
- Install other monitoring equipment:
 - Temperature sensors on the range hood, above the cooktop, to identify cooking events (as done for CEVICA).
 - Range hood monitor (smart plug, motor sensor or anemometer, as was done during CEVICA).
- Analyze air monitor, stove use (temperature sensors) and range hood use data
 - Assess the impacts (benefits) of the countertop air monitor intervention on range hood use during cooking-related PM_{2.5} events.
 - Determine the relative contribution of outdoor air pollution to indoor PM_{2.5} concentrations.
 - Determine relative PM_{2.5} concentrations in different locations in the kitchen (countertop level vs air above the range hood) to inform the efficacy of using a countertop measurement to quickly identify when particles are being generated by cooking.
- Prepare a *Manuscript #2* summarizing the study findings of this Task for submission to a peer-reviewed journal.
- Prepare a *CPR Presentation #1* and participate in CPR meeting per subtask 1.3.

Products:

- Manuscript #2
- CPR Report #1

TASK 4: COSTS AND PERCEIVED BARRIERS TO SWITCHING FROM GAS TO ELECTRIC COOKING

The goal of this task is to leverage the infrastructure and relationships for recruitment and field work that were established for the CEVICA study to investigate the perceptions and experiences of low-income households switching from gas to induction electric cooking.

The Recipient shall:

- Develop survey to better understand perceptions and experiences of switching from gas to electric cooking.
- Recruit 60 low-income households with an asthmatic child, including 30 former CEVICA participants who are currently using an electric induction stove and 30 households who were eligible for the CEVICA study but declined to participate and are currently using a gas stove.
- Conduct interviewer-administered survey including both quantitative and qualitative questions.
- Analyze the collected data on concerns, satisfaction and perceptions and compare with electricity use data (specific to the induction stove) previously collected and analyzed for a subset of CEVICA participants.

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- Prepare a *Manuscript #3* summarizing the study findings of this task for submission to a peer-reviewed journal.
- Prepare a *Presentation #2* summarizing the Task 4 study findings, key conclusions, and implications for research, policies, and programs in a format suitable for technical and non-technical audiences.

Products:

- Manuscript #3
- Presentation #2

TASK 5: EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

- Complete the *Initial Project Benefits Questionnaire*. The Initial Project Benefits Questionnaire shall be completed by the Recipient with 'Kick-off' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Complete the *Annual Survey* if requested by the CAM. The survey covers, but is not limited to the following topics, as applicable to the project:
 - Changes in energy consumption, utility bills, and emissions
 - Public and private funding
 - Demonstration and deployment beyond the project Community engagement
 - Improvements in codes and standards
- Confirm and revise survey responses as directed by the CAM.
- Complete the *Final Project Benefits Questionnaire*. The Final Project Benefits Questionnaire shall be completed by the Recipient with 'Final' selected for the 'Relevant data collection period' and submitted to the CAM for review and approval.
- Respond to CAM questions regarding the benefits questionnaire drafts.
- Complete the project profile on the CEC's public online project on the [Energize Innovation website](http://www.energizeinnovation.fund) (www.energizeinnovation.fund), and provide *Documentation of Initial Project Profile on EnergizeInnovation.fund*, including the profile link, to the CAM.
- Address any edits or questions from the CAM regarding the Energize Innovation Project Profile content.
- If the Recipient is an Innovation Partner on the project, complete and update the organizational profile on the CEC's public online project and recipient directory on the [Energize Innovation website](http://www.energizeinnovation.fund) (www.energizeinnovation.fund) and provide *Documentation of Organization Profile on EnergizeInnovation.fund*, including the profile link, to the CAM.
- If the Recipient's organizational profile is changed, update the organizational profile on the CEC's public online project and recipient directory on the [Energize Innovation website](http://www.energizeinnovation.fund) (www.energizeinnovation.fund), and provide an *Documentation of Updated Organization Profile on EnergizeInnovation.fund*, including the profile link, as needed.
- If the Recipient's project profile is changed, update the project profile on the CEC's public online project and recipient directory on the Energize Innovation website (www.energizeinnovation.fund), and provide *Documentation of Updated ([Year]) Project Profile on EnergizeInnovation.fund*, including the profile link, to the CAM.
- Address any edits or questions from the CAM regarding the Project Profile content.

Products:

- Initial Project Benefits Questionnaire

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- Annual Survey(s)
- Final Project Benefits Questionnaire
- Documentation of Initial Project Profile on EnergizeInnovation.fund
- Documentation of Updated Organization Profile on EnergizeInnovation.fund (as needed)
- Documentation of Updated ([Year]) Project Profile on EnergizeInnovation.fund

TASK 6 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to ensure the scientific and techno-economic analysis and tools developed under this agreement are utilized in the energy policy, and/or planning decisions at the state and/or local levels, academic community and/or commercial sector.

The Recipient Shall:

- Develop and submit a *Knowledge Transfer Plan* that identifies the proposed activities the recipient will conduct to meet the goal of the task. The *Knowledge Transfer Plan* should include at a minimum:
 - Specific policy and planning efforts this project is expected to inform.
 - Specific stakeholder groups and energy policy and planning practitioners who will utilize the results of this project.
 - Proposed activities the Recipient will conduct to ensure the tools and results from this project will be utilized and adopted by the groups identified above.
- Present the *Draft Knowledge Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Knowledge Transfer Plan*. This document will identify:
 - TAC comments the Recipient proposes to incorporate into the *Final Knowledge Transfer Plan*.
 - TAC comments the Recipient does not propose to incorporate with and explanation why.
- Submit the *Final Knowledge Transfer Plan* to the CAM for approval.
- Implement the activities as described in the *Final Knowledge Transfer Plan*.
- Develop a *Knowledge Transfer Summary Report* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the Final Technology Transfer Plan. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an CEC- sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the California CEC.
- 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.

Products:

- Knowledge Transfer Plan (draft and final)
- Summary of TAC Comments
- Technology Transfer Summary Report (draft and final)
- High Quality Digital Photographs

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V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.