

GRANT AMENDMENT REQUEST FORM (GARF)CEC-277 (Revised 10/2015)
COMMISSION

CALIFORNIA ENERGY



Original Agreement #	EPC-17-040		1
ERDD	Felix Villanueva	51	916-327-2206

Prospect Silicon Valley	27-0220018
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<input type="checkbox"/> Term Extension	New End Date: 3/31/2023	Include revised schedule and complete items A, B, C, & F below.
<input type="checkbox"/> Budget Augmentation	Amendment Amount: \$ 0	Include revised budget and complete items A, B, C, D & F below.
<input checked="" type="checkbox"/> Budget Reallocation		Include revised budget and complete items A, B, C, & F below.
<input checked="" type="checkbox"/> Scope of Work Revision		Include revised scope of work and complete items A, B, C, E & F below.
<input type="checkbox"/> Change in Project Location or Demonstration Site		Include revised scope of work and complete items A, B, C, E & F below.
<input checked="" type="checkbox"/> Novation/Name Change of Prime Contractor/Recipient		Include novation documentation and complete items A, B, C, & F below.
<input type="checkbox"/> Terms and Conditions Modification		Include applicable exhibits with bold/underline/strikeout and complete items A, B, C, & F below.

Business Meeting approval is not required for the following types of Agreements:☐ ARFVTP agreements under \$75K delegated to Executive Director.

Proposed Business Meeting Date	3/12/2019	<input checked="" type="checkbox"/> Consent	<input type="checkbox"/> Discussion
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Business Meeting Presenter	Felix Villanueva	Time Needed:	5 minutes
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Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description

PROSPECT SILICON VALLEY. Proposed resolution to approve Amendment 1 to Agreement EPC-17-040 with Prospect Silicon Valley to replace Prospect Silicon Valley as prime with subcontractor Rocky Mountain Institute. A three party agreement recital is included in the amended Scope of Work and delineates the roles and responsibilities for Prospect Silicon Valley, Rocky Mountain Institute, and the Energy Commission. This amendment also includes a budget reallocation between Prospect Silicon Valley and Rocky Mountain Institute. (EPIC funding) Contact: Felix Villanueva.

Legal Company Name:	Budget
Association for Energy Affordability, Inc.	\$ 1,046,239
The Regents of the University of California, Davis Campus	\$ 676,800
California Housing Partnership Corporation	\$ 370,443
City and County of San Francisco	\$ 278,617
David Baker, an Architectural Corporation	\$ 571,875
Integral Group, Inc.	\$ 571,885
Stone Energy Associates	\$ 156,684
To Be Determined	\$ 45,000
Prospect Silicon Valley	\$ 232,600

Legal Company Name:

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**D) Budget Information**

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
			\$
			\$
			\$
			\$
			\$
			\$
R&D Program Area:	EERO: Buildings		\$
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

1. Is Agreement considered a "Project" under CEQA?
☒ Yes (skip to question 2) ☐ No (complete the following (PRC 21065 and 14 CCR 15378)):
 Explain why Agreement is not considered a "Project":
 Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because .
2. If Agreement is considered a "Project" under CEQA:
☒ a) Agreement **IS** exempt. (Attach draft NOE)
☐ Statutory Exemption. List PRC and/or CCR section number: _____
☐ Categorical Exemption. List CCR section number: Cal. Code Regs., tit 14, § 15301 ; Cal. Code Regs., tit 14, § 15306
☐ Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section:
 The Energy Commission made CEQA findings pertaining to this project, including filing a NOE with OPR when the project was originally adopted by the Commission on 6/13/2018. The currently-proposed changes to replace the prime recipient with an existing major subcontractor, and to reallocate the budgets accordingly will result in no impact to the environment beyond that already considered on 6/13/2018 and does not constitute a substantial change or new information of substantial importance under California Code of Regulations, title 14, section 15162.
- ☐ 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

- | | | |
|---|---|--|
| 1. Exhibit A, Scope of Work | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 3. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 4. Novation Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEC 105, Questionnaire for Identifying Conflicts | | <input checked="" type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

EXHIBIT A

Scope of Work

RECITALS

- A. This Agreement was originally executed by the California Energy Commission (Energy Commission or just the Commission) and Prospect Silicon Valley.**
- B. Amendment 1 to this Agreement changes it by Prospect Silicon Valley assigning all of its rights, responsibilities and obligations under the Agreement to the Rocky Mountain Institute.**
- C. Rocky Mountain Institute is a new party to the Agreement.**
- D. Prior to Amendment 1, Rocky Mountain Institute was a major subcontractor under the Agreement and was part of the original project team that submitted an application for the project to be performed under the Agreement.**
- E. This Agreement involves the test and demonstration standardized energy efficiency retrofit packages specifically geared towards low-income multifamily housing market that can be scaled widely to drive down costs.**
- F. The change from Prospect Silicon Valley to Rocky Mountain Institute is brought about by Prospect Silicon Valley's desire to assign all of its rights, responsibilities and obligations under the Agreement to Rocky Mountain Institute who has agreed assume those rights, responsibilities and obligations under the Agreement.**
- G. There are no changes to any of the tasks or products in the Scope of Work. Prospect Silicon Valley will now act as a major subcontractor to Rocky Mountain Institute and complete work related to Tasks 2, 3, and 7. Rocky Mountain Institute will be responsible for all work under the Agreement but as the Recipient, including all of the administrative tasks (Task 1).**
- H. The Energy Commission issued a Stop Work Order to Prospect Silicon Valley until this Amendment 1 has been executed.**
- I. Prospect Silicon Valley agrees to waive any claims to reimbursement for any work or expenses incurred prior to this Amendment 1 and will only be reimbursed for work performed after Amendment 1 is fully executed and it has entered into a subcontract with the Recipient, Rocky Mountain Institute.**
- J. Rocky Mountain Institute agrees waive any claims for reimbursement for any work or expenses incurred prior to this Amendment 1 and will only be reimbursed for work performed after Amendment 1 is fully executed.**
- K. Exhibit C "Terms and Conditions," Section 23.c. of the Agreement provides that the Agreement is not assignable by the Recipient in whole or in part without the consent of the Energy Commission in the form of an amendment.**

EXHIBIT A

Scope of Work

- L. The three Parties intend that by signing this Amendment 1 to the Agreement, Rocky Mountain Institute will replace Prospect Silicon Valley as the Recipient and Prospect Silicon Valley will become a major subcontractor to Rocky Mountain Institute once they enter into their own, separate agreement.**

EXHIBIT A Scope of Work

In consideration for the mutual promises contained in this Amendment 1 to the Agreement, the three Parties agree to this assignment as follows:

1. The foregoing Recitals are true and correct and included as part of this Agreement.
2. Prospect Silicon Valley assigns all of its rights, responsibilities and obligations under the Agreement to the Rocky Mountain Institute.
3. Prospect Silicon Valley and Rocky Mountain Institute waive any and all claims to reimbursement for any work performed or expenses incurred under the Agreement prior to the execution of this Amendment 1.
4. Rocky Mountain Institute assumes and agrees to perform and fulfill all the terms, covenants, conditions, and obligations previously required to be performed and fulfilled by Prospect Silicon Valley under the Agreement and any reference to Prospect Silicon Valley in the Agreement will be deemed a reference to Rocky Mountain Institute. Rocky Mountain Institute also assumes all obligations and liabilities of, and all claims against Prospect Silicon Valley under the Agreement as if it was the original party to the Agreement.
5. Exhibit B for the Prime contractor is replaced with the attached Exhibit B. Exhibit B for sub Prospect Silicon Valley is replaced with the attached Exhibit B.
6. Upon execution of this Amendment 1, the stop work order is lifted and Rocky Mountain Institute shall proceed with the Agreement as the Recipient.

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Program Design and Market Enablement
3	X	Technical Solution Design
4	X	Demonstration and Deployment
5	X	Evaluation, Measurement, and Verification
6		Market Scaling
7		Technology/Knowledge Transfer Activities
8		Evaluation of Project Benefits

B. Acronym/Term List

Acronym/Term	Meaning
AEA	Association for Energy Affordability, Inc.
CAM	Commission Agreement Manager
CPR	Critical Project Review
CSD	California Department of Community Services and Development

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

DAC	Disadvantaged Community
Fuel Switching	Involves shifting from fossil fuels to a lower carbon alternative
LIWP-MF	Low-Income Weatherization Program for Multifamily Properties
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to test, develop and demonstrate a business model that will enable the widespread adoption of energy efficiency retrofit packages to be developed in multifamily buildings in Disadvantaged Communities (DACs) located in electric investor-owned utility areas throughout California.

B. Problem/ Solution Statement

Problem

A series of structural barriers exacerbate the uptake of efficiency improvements in multifamily properties and subsequently diminish the potential for quality of life improvements for many low-income families. The Energy Commission's 2016, "Low Income Barriers Report" highlights structural barriers. They include low homeownership rates, complex financial arrangements for low-income multifamily housing owners, insufficient access to capital, substantial building stock with high levels of deferred maintenance, and under-served or remote locations of residents.² While these structural barriers are persistent, there are additional operational and perceptual barriers identified by affordable housing owners. These include an unclear value proposition, lack of confidence in achieving savings, and project technical complexity even with technical assistance that requires unique building owners and property manager champions that are not always present or able to tackle more complex projects.

Solution

To increase adoption of energy efficiency retrofits in multifamily affordable housing, this project will address the technical concerns and business model needs of the market. Technical innovation will be advanced with research, and testing high impact, innovative and emerging technologies that are currently underutilized, yet offer substantial energy savings potential. The technologies will be consolidated into energy efficiency retrofit packages standardized by building classes. These packages will be standardized for scalability and include envelope, heating, ventilation, and air conditioning, lighting, appliances, and system controls. These can be installed relatively quickly with minimal tenant disruption. The packages will be designed for predictable performance, low cost manufacturability and streamlined financing. In the long-run the program will offer the packages to building owners guaranteeing high quality performance and comfort delivered to tenants ("Energy Plan"). Once building owners are enrolled, the package designs will be taken to builders and manufacturers to develop the retrofit solutions at scale. Securing participation from building owners first will demonstrate to builders and manufacturers that there is demand for the retrofit solutions they develop.

² Scavo, Jordan, Suzanne Korosec, Esteban Guerrero, Bill Pennington, and Pamela Doughman. 2016. Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-income customers and Small Business Contracting Opportunities in Disadvantaged Communities. California Energy Commission. Publication Number: CEC-300-2016-009-CMF, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-02/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A_Commission_Final_Report.pdf.

EXHIBIT A

Scope of Work

EXHIBIT A

Scope of Work

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to develop, demonstrate, and operationalize a business model that addresses the barriers to large-scale adoption of energy efficiency retrofits in multifamily housing in DACs. Specifically, the project will develop strategies to:

1. Standardize energy efficiency retrofits to double energy efficiency in existing multifamily buildings by 2030.
2. Address financial barriers including developing a trajectory for reducing retrofit package costs by 50% while increasing capital access to 100% of installed energy efficiency measures.
3. Develop and deploy a scalable business model to generate owner and manufacturer demand and sector interest to facilitate mass adoption.

Ratepayer Benefits³

This Agreement will result in the ratepayer benefits of:

- Reduced energy costs and improved access to energy efficiency retrofits for multifamily properties in DACs burdened by structural barriers to adoption such as: complex financial arrangements for low-income multifamily housing owners, insufficient access to capital, building stock with high levels of deferred maintenance, and residences located in underserved or remote regions.
- Improved economic security, living conditions, comfort, and health and safety for low-income tenants receiving retrofits. Residents will also experience lowered energy costs and improved indoor air quality.
- Greater electricity system reliability by integrating demand response and load shifting solutions into the integrated energy efficiency retrofit packages.
- Increased number of local job opportunities in DACs through installation of integrated energy efficiency retrofit packages. Increased adoption of energy efficiency retrofits may lead to local economic development in the contracting industry and trades.
- Increased availability and reduced costs of technologies as a result of demand created by installation of standardized integrated energy efficiency retrofit packages, lowering the cost of the technologies for all Californians.

Technological Advancement and Breakthroughs⁴

This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals. It will do so by studying a variety of high impact, innovative and emerging technologies and strategies, and market-ready technologies currently underutilized in the target market. The most promising technologies and strategies will be integrated into a set of rapidly deployable integrated energy efficiency retrofit packages developed for each multifamily type.

³ 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).

⁴ 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

Agreement Objectives

The objectives of this Agreement are to:

1. Test and deploy innovative and emerging and off-the-shelf technologies to ensure performance and ease of delivery of retrofits with a minimum 10% reduction in electricity usage across the portfolio of at least 300,000 square feet of multifamily buildings located in DACs in electric IOU service areas. The minimum 10% reduction in electricity usage shall be measured in isolation from changes in electricity consumption due to fuel switching measures.
2. Develop and demonstrate replicable integrated energy efficiency retrofit packages in at least 300,000 square feet of affordable multifamily housing stock.
3. Create financing, tools, and contracts that facilitate building owners' assessment of the opportunity and ability to move forward with an energy efficiency retrofit.
4. Develop and operationalize a comprehensive Business Plan, that informs how the market facilitated by this project's energy efficiency retrofit model will persist and thrive beyond the award.
5. Design and implement a cost-effective measurement and verification process that supports energy performance and behavioral performance goals.
6. Create a consortium of manufacturers and participating contractors willing to supply affordable, high-quality integrated energy efficiency retrofit packages.
7. Facilitate wider market adoption of energy efficiency retrofit measures during and after the project period.

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.

EXHIBIT A

Scope of Work

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:

- 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.

EXHIBIT A

Scope of Work

MEETINGS

Subtask 1.2 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

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

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

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

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

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports and invoices (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
 - Any other relevant topics.
- Provide an *Updated Project Schedule*, *List of Match Funds*, and *List of Permits*, as needed to reflect any changes in the documents.

The CAM shall:

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

Recipient Products:

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

CAM Product:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive Energy Commission funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the Energy Commission and the Recipient. As determined by the CAM, discussions may include

EXHIBIT A

Scope of Work

project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

CPR meetings generally take place at key, predetermined points in the Agreement, as determined by the CAM and as shown in the Task List on page 1 of this Exhibit. However, the CAM may schedule additional CPR meetings as necessary. The budget will be reallocated to cover the additional costs borne by the Recipient, but the overall Agreement amount will not increase. CPR meetings generally take place at the Energy Commission, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

The Recipient shall:

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

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

EXHIBIT A

Scope of Work

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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

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

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
 - Summarize 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 the Final Report, which will be due at least **two months** before the Agreement end date. When creating the Final Report Outline and the Final Report, the Recipient must use the Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

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

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Style Manual, and Final Report Template provided by the CAM with the following considerations:
 - Ensure that the report includes the following items, in the following order:
 - Cover page (**required**)
 - Credits page on the reverse side of cover with legal disclaimer (**required**)
 - Acknowledgements page (optional)
 - Preface (**required**)
 - Abstract, keywords, and citation page (**required**)
 - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
 - Executive summary (**required**)
 - Body of the report (**required**)
 - References (if applicable)
 - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
 - Bibliography (if applicable)
 - Appendices (if applicable) (Create a separate volume if very large.)
 - Attachments (if applicable)
 - Ensure that the document is written in the third person.

EXHIBIT A

Scope of Work

- 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

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

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

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

- A list of the match funds that identifies:

EXHIBIT A

Scope of Work

- 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.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

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

Subtask 1.8 Permits

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

The Recipient shall:

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

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

- If during the course of the Agreement additional permits become necessary, then provide the CAM with an *Updated List of Permits* (including the appropriate information on each permit) and an *Updated Schedule for Acquiring Permits*.
- Send the CAM a *Copy of Each Approved Permit*.

EXHIBIT A

Scope of Work

- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 days. Either of these events may trigger a CPR meeting.

Products:

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

Subtask 1.9 Subcontracts

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

The Recipient shall:

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

Products:

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

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

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

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

EXHIBIT A

Scope of Work

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.

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.
- Develop a *Risk Assessment and Mitigation Plan* to identify, assess and mitigate any uncertain event or condition that could impact the project's objectives, including project budget, schedule and quality of the deliverables. A subsection of the plan will focus on

EXHIBIT A

Scope of Work

identifying potential emerging and innovative technologies. The plan will be developed in collaboration with project partners.

Products:

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)
- TAC Meeting Back-up Materials
- TAC Meeting Summaries
- Risk Assessment and Mitigation Plan (draft and final)

EXHIBIT A

Scope of Work

IV. TECHNICAL TASKS

Note regarding Low-Income Weatherization Program match-funding expenditure timing under this Agreement:

The Recipient's subcontractor, Association for Energy Affordability, Inc. (AEA), will be the conduit for, and manager of, match funding for this project from the California Department of Community Services and Development's (CSD) Low-Income Weatherization Program for Multifamily Properties (LIWP-MF). LIWP-MF is funded by the Greenhouse Gas Reduction Fund. As Program Administrator, CSD selected AEA as the statewide Program Service Provider for LIWP-MF for at least fiscal years 2016-2017 and 2017-2018. (A commitment letter from CSD to the Energy Commission's Contracts, Grants and Loans Office, dated March 29, 2018, describes CSD's commitment of LIWP funds for this project. This commitment letter is incorporated by reference in this Agreement.) Regarding these committed match funds, AEA may make written requests for an advanced payment from CSD in an amount not to exceed 25% of the annualized contract amount between CSD and AEA. These advanced payments are held in a LIWP-MF-dedicated account and may be used for LIWP-MF administrative and consultation services as well as direct program costs (project incentive payments). For tasks involving LIWP match-funded activities and expenditures, the Recipient shall ensure that AEA is contemporaneously working with the Recipient and the rest of the project team, and that AEA is expending LIWP match funds. Such work may involve AEA requesting advance payments as described above. The Recipient shall incorporate in its subcontract with AEA one or more provisions that require AEA to keep Recipient informed periodically regarding the status of advanced payments and projected expenditure timeline under this agreement. (Cross-reference: Section 7(b) of Exhibit C of this Agreement.) The Recipient shall keep the CAM informed about AEA advance payments and their projected expenditure by including information in the monthly Progress Reports under Subtask 1.5.

Note regarding information under this Agreement:

Pursuant to Exhibit D, if any information under this Agreement is "Personal Information" as defined under the Information Practices Act (see California Civil Code section 1798.3(a) and Exhibit D section 3 of this Agreement for the definition of "Personal Information") then Recipient and any subcontractor or partner who collects or otherwise has access to the Personal Information must comply with the Information Practices Act (California Civil Code sections 1798 *et seq.*) when performing activities under this Agreement.

TASK 2: PROGRAM DESIGN AND MARKET ENABLEMENT

The goal of this task is to develop business tools and facilitate a market for integrated energy efficiency retrofits in multifamily affordable housing. The Recipient shall ensure that AEA is contemporaneously working with the Recipient and other relevant subcontractors on appropriate portions of Task 2, and that AEA is expending LIWP match funds.

Subtask 2.1 Stakeholder Engagement and Market Analysis

The goal of this subtask is to engage stakeholders (lenders, owners, tenants, contractors/vendors, and local governments), to develop their understanding and interest in integrated energy efficiency retrofits, and to scope and develop the business plan and tools necessary to facilitate the finance, purchase, installation and operation of an integrated energy efficiency retrofit package.

EXHIBIT A

Scope of Work

The Recipient shall:

- Design *Market Survey and Interview Questions* in order to conduct market research that will socialize this concept in the market while informing a long-term business plan to scale the adoption of pre-designed, standardized energy efficiency retrofit packages.
- Evaluate existing research and conduct personal interviews with representative stakeholders to determine market barriers limiting energy efficiency retrofit activity, and motivating successes, including cost, expected savings, constructability, operational/maintenance, energy performance risk, and policy barriers. Findings to be synthesized in a *Market Survey and Interview Report*.
- Conduct stakeholder convenings to introduce stakeholders to the energy efficiency retrofit model, gain input to design business tools and technical solutions, and identify initial requirements, by stakeholder, to develop contingent demand and supply of energy efficiency retrofits.⁵ Findings to be summarized in *Convenings Summary*.
- Develop a comprehensive *Business Plan*, which includes functional requirements of a business informed by the above activities, and work plans for market facilitation via a platform both during and after the award period. The *Business Plan* must discuss how the market scaling activities described in Task 6 will be supported beyond the grant term, including the costs, fees that will need to be charged, and the engagement and partnership strategy for consortiums, financing partners, energy service providers, manufacturers, utilities and others.

Products:

- Market Survey and Interview Questions (draft and final)
- Market Survey and Interview Memo
- Convenings Summary
- Business Plan (draft and final)

Subtask 2.2 Project Financing

The goal of this subtask is to develop the necessary tools and contracts required to facilitate energy efficiency retrofits, including secure cash flows to ensure a given project qualifies for sufficient financing to implement an energy efficiency retrofit, while streamlining processes and minimizing financing costs.

The Recipient shall:

- Document existing financing barriers and limitations to accessing capital and recommend solutions to be evaluated as part of research.
- Develop a performance-based *Energy Plan* to deliver a suite of energy services at a fixed monthly cost that contractually assigns cost and risk to all parties in a retrofit transaction, supported by monitoring and verification to ensure energy and bill savings.
- Develop actionable *Financing Tools*, such as proformas, summaries of available financial products, how-to manuals, etc. that building owners can use to assess and act upon the opportunities to incorporate energy efficiency packages into major capital improvements.

Products:

- Energy Plan (draft and final)
- Financing Tools

⁵ Contingent demand and supply are commitments to respectively purchase or sell a good or service if specified conditions are met. Demonstration of contingent demand is a tool to motivate vendors to meet the conditions necessary to secure the volume of potential sales, and contingent supply is a tool to motivate lenders and governments to streamline and mitigate barriers to activity.

EXHIBIT A

Scope of Work

TASK 3: TECHNICAL SOLUTION DESIGN

The goal of this task is to research measures and design a set of integrated solutions for demonstration of streamlined, cost-optimized integrated energy efficiency retrofit packages. The Recipient shall ensure that AEA is contemporaneously working with the Recipient and other relevant subcontractors on appropriate portions of Task 3, and that AEA is expending LIWP match funds.

Subtask 3.1 Building and Market Characterization

The goal of this subtask is to assess building stock characteristics, homogeneity, and market size in order to determine the most appropriate retrofit solution packages for testing as well as key attributes needed in buildings for demonstration.

The Recipient shall:

- Perform a building characterization analysis to create a *Building Characterization Matrix* that will segment common types of building stock while identifying prevalent building systems and structural characteristics for each building category.
- Analyze and evaluate data from over 40 deep energy saving LIWP-MF retrofit projects that AEA has completed in the last year, as well as additional projects that are currently being developed or installed. This data will be used for analyzing measure savings, configuring measure package combinations, determining construction and feasibility costs, contracting models, and co-benefits, as well as for studying barriers, including building owner motivations and decision-making logic when choosing to pursue energy efficiency retrofits. Takeaways will be distilled into a *Project Case Studies Summary*.

Products:

- Building Characterization Matrix
- Project Case Studies Summary

Subtask 3.2 Building Prototype and Measure Package Development

The goal of this subtask is to develop cost-optimized integrated energy efficiency retrofit packages that will serve as the basis of design for the demonstration projects.

The Recipient shall:

- Create Baseline Models using building simulation software such as EnergyPlus and discuss in *Baseline Energy Models Report*. This report will provide all the assumptions and calculations used for each of the multifamily building typologies represented in the Building Characterization Matrix created in Subtask 3.1.
- Use the baseline models to evaluate the relative impact of the technologies reviewed in Subtask 3.1 and discuss results in a *Summary of Evaluation of Technologies*.
- Identify screening criteria based on technology fit (site and performance), potential impact (energy and market), readiness for demonstration (i.e. level of previous testing, patent status, previous deployments), and maturity of the manufacturer and/or service provider. Document technology selection process in *Emerging Technologies Assessment Criteria Document*.
- Identify high potential emerging technologies that could be applied to retrofit packages in the *Emerging Technology Report*.
- Develop a set of *Integrated Energy Efficiency Retrofit Packages PowerPoint Slides* based on Subtasks 3.1 and 3.2 to inform the demonstration site selection process and to inform building owners of the value proposition of implementation.

EXHIBIT A

Scope of Work

- Prepare a *CPR Report #1* and participate in a CPR meeting, per Subtask 1.3. In addition, CPR Report #1 must address how the market scaling activities described in Task 6 could be supported beyond the grant term, including the costs, fees that will need to be charged, and the engagement and partnership strategy for consortiums, financing partners, energy service providers, manufacturers, utilities and others.

Products:

- Baseline Energy Models Report
- Summary of Evaluation of Technologies
- Integrated Energy Efficiency Retrofit Package PowerPoint Slides (draft and final)
- Emerging Technologies Assessment Criteria Document (draft and final)
- Emerging Technologies Report
- CPR Report #1

Subtask 3.3 Prototype/Constructability Testing

The goal of this subtask is to lab test and/or build construction mockups of innovative and emerging measures as necessary to ensure performance, constructability, and ease of delivery.

The Recipient shall:

- In parallel with Subtask 3.2 determine retrofit measures or integrated measures requiring lab performance testing or construction mockups.
- Work with contractor and manufacturer advisory groups to identify constructability issues.
- Develop a *Performance Test Plan* of performance risks to observe and evaluate, including target performance levels needed to meet cost effectiveness criteria for building owners.
- Conduct lab testing and constructability testing to produce a set of findings and recommendations for improved delivery and performance in situ. Perform mockup testing of prefabricated or off-site built assemblies to verify constructability and test application feasibility under various simulated site conditions. Results will be synthesized in a *Performance Test Results and Recommendations* report.

Products:

- Performance Test Plan (draft and final)
- Performance Test Results and Recommendations

TASK 4: DEMONSTRATION AND DEPLOYMENT

The goal of this task is to demonstrate and field test the measure packages developed during the applied research stage (Task 3) of the project. The Recipient shall ensure that AEA is contemporaneously working with the Recipient and other relevant subcontractors on appropriate portions of Task 4, and that AEA is expending LIWP match funds. For each retrofitted building, the Recipient shall ensure that LIWP-MF-funded costs and energy-efficiency measures will be undertaken in lock-step with EPIC-funded equipment costs and energy-efficiency measures.

Subtask 4.1 Demonstration Site Selection

The goal of this subtask is to select an appropriate set of buildings to test the integrated energy efficiency retrofit packages modeled and mocked up in the applied research stage of the project. Buildings will be representative of a large pool of multifamily building stock for which the solutions will be transferable.

EXHIBIT A

Scope of Work

The Recipient shall:

- Perform outreach to property owners to target ideal candidates for demonstration based upon building characterization analysis and suitability for testing integrated energy efficiency retrofit packages. Buildings will be representative of a large pool of multifamily building stock in California for which the solutions will be transferable.
- Selection of each demonstration site is subject to review and approval by the CAM. The CEC reserves the right to visit all demonstration sites prior to approval. The recipient must have written authorization from the CAM for each demonstration site in order to proceed.
- After CAM approval of a demonstration site, if problems arise in continuing with the site, written approval from the CAM is necessary to end work on this site and pursue a different site.
- Obtain and provide *Property Demonstration Site Commitment Letters* from building owners describing the buildings committed to demonstrate the integrated energy efficiency retrofit packages.
- Collect baseline energy performance data from all targeted properties, including annual disaggregated end use energy consumption per unit, identification of major existing energy using equipment—including age, efficiency, square footage, energy density (energy use/sf) equipment set points, equipment schedules, usage patterns, and occupancy patterns, results of which will be reported in a set of *Energy Audit Reports* for each property.
- Prepare a *CPR Report #2* and participate in a CPR meeting, per Subtask 1.3. In addition, CPR Report #2 must address how the market scaling activities described in Task 6 could be supported beyond the grant term, including the costs, fees that will need to be charged, and the engagement and partnership strategy for consortiums, financing partners, energy service providers, manufacturers, utilities and others.

Products:

- Copies of Property Demonstration Site Commitment Letters
- Energy Audit Reports
- CPR Report #2

Subtask 4.2 Design and Engineer Demonstration Site Retrofit Solutions

The goal of this subtask is to design and engineer a set of plans for each of the selected demonstration sites based on the integrated energy efficiency retrofit packages. The objective of this task is to create replicable and standardized designs that are transferable to a large volume of multifamily buildings that the demonstration sites were selected to represent.

The Recipient shall:

- Work with property owners and any design teams already engaged in the project to understand project goals.
- Develop *Retrofit Scope of Work Report* including all tasks for which the project team is responsible as well as stakeholders' roles in the project.
- Design and engineer a set of cost optimized integrated energy efficiency retrofit packages, based on the results of Task 3, from which building owners can choose and select one final *Demonstration Site Design* for each demonstration site. The design should include a description of the recommended retrofit package, implementation approach, challenges—such as code and regulatory barriers, and how to minimize performance and other risks associated with the recommended retrofit package.
- Create detailed *Building Specifications* for each selected integrated retrofit package for each demonstration site, including estimated total project cost, energy and cost savings,

EXHIBIT A

Scope of Work

greenhouse gas emission reductions, and project economics (e.g., life cycle cost savings, simple payback) for the building owner and the tenants.

- Prepare a *CPR Report #3* and participate in a CPR meeting, per Subtask 1.3. In addition, CPR Report #3 must address how the market scaling activities described in Task 6 could be supported beyond the grant term, including the costs, fees that will need to be charged, and the engagement and partnership strategy for consortiums, financing partners, energy service providers, manufacturers, utilities and others.

Products:

- Retrofit Scope of Work Table
- Demonstration Site Designs (draft and final)
- Building Specifications (draft and final)
- CPR Report #3

Subtask 4.3 Retrofit Delivery, Quality Assurance/Quality Control, and Commissioning

The goal of this subtask is to oversee the installation of the selected integrated energy efficiency retrofit packages at each of the demonstration sites and to provide quality assurance and building commissioning to optimize the performance of the installed measures and minimize the performance risks associated with the projects.

The Recipient shall:

- Conduct commissioning on each demonstration site and provide direction for the commissioning process and ensure that buildings systems perform according to the design intent and owner's operational requirements. Commissioning should include, but is not limited to the following:
 - Review submittals and work with contractors to ensure that they understand all elements of the design.
 - Perform pre-installation and mid-construction site visits and verifications to ensure quality control and that the project meets the design intent.
 - Perform on-site post installation verifications to ensure the as-built conditions match the design documents and to:
 - Document equipment is installed and started per manufacturer's recommendations
 - Document that equipment and systems receive operational checkout by installing contractors
 - Document system performance with functional performance testing and monitoring
 - Ensure that the building owners are adequately trained on the operation and maintenance of building equipment
- Discuss the results of the commissioning process in *Commissioning Reports* for each demonstration site.

Product:

- Commissioning Reports (draft and final)

Subtask 4.4 Development of Design and Installation Guidance Manuals

The goal of this subtask is to synthesize the learnings in such a way that enables the full market to participate and expand the solution set and delivery of integrated retrofit packages.

EXHIBIT A

Scope of Work

The Recipient Shall:

- Publish a *Design Recommendations Manual* to enable the multifamily market to readily develop integrated energy efficiency retrofit packages and incorporate them into their design documents, including project financing opportunities and tools (Subtask 2.2) and discuss how the package could be financeable by utility cost savings (Task 6). The documents will also include design considerations for modularized retrofit systems should such an approach be developed through the course of the project.
- Identify areas for process improvements with recommendations to be published in an *Installation Guidance Manual*.

Products:

- Design Recommendations Manual (draft and final)
- Installation Guidance Manual (draft and final)

TASK 5: EVALUATION, MEASUREMENT AND VERIFICATION

The goal of this task is to monitor and verify demonstration sites' retrofit performance.

Subtask 5.1 Evaluation Planning

The goal of this subtask is to design a process for monitoring, measuring and evaluating the results of the installed retrofits.

The Recipient Shall

- Develop *End-use Monitoring Plan* for demonstration sites. *End-use Monitoring Plan* will include details regarding approach to instrumentation, data collection, data analyses, and statistical analyses and will include:
 - Description of end uses and equipment to be monitored
 - Schedule of metering/monitoring equipment to be used and how it will be installed
 - Instrumentation calibration methodology
 - Data logging and acquisition methodology and schedule (minimum of 6 months pre- and 6 months post-retrofit data)
 - Explanation of how the data will be annualized for both the pre and post period and why each data point being monitored is relevant to the final analysis and how it will be used
 - Monitoring equipment budgets
 - Data format protocols, data collection process
 - Description of the data analysis and quality assurance procedures
 - Description of methods (e.g., protocols, practices) that will be performed, to manage and protect Person Information and to comply with the Information Practices Act.
- Prepare a *CPR Report #4* and participate in a CPR meeting, per Subtask 1.3. In addition, CPR Report #4 must address how the market scaling activities described in Task 6 could be supported beyond the grant term, including the costs, fees that will need to be charged, and the engagement and partnership strategy for consortiums, financing partners, energy service providers, manufacturers, utilities and others.

Product:

- End-use Monitoring Plan (draft and final)
- CPR Report #4

EXHIBIT A

Scope of Work

Subtask 5.2 Data Collection and Analysis

The goal of this subtask is to implement the End-use Monitoring Plan developed in Subtask 5.1; collect and analyze for a minimum period of 6 months pre- and 6 months post-retrofit installation data to evaluate the impact of the measures and retrofit packages individually and in relation to the entire demonstration site, and to evaluate the project's overall results in achieving the goals, ratepayer benefits, breakthroughs and objectives in the agreement (Section I.C.).

The Recipient Shall:

- Implement End-use Monitoring Plan from Subtask 5.1
- Install metering and monitoring equipment.
- Collect pre- and post-installation data.
- Perform data analysis and project evaluation to produce *Demonstration Site Monitoring and Evaluation Reports* to include pre- and post-installation energy (e.g., kWh, kW, therms), performance and cost data for installed measures, including all assumptions used in analyzing the data at the equipment and building level, and a discussion of whether the goals, ratepayer benefits, breakthroughs and objectives in the agreement (Section I.C.) were achieved. The CAM will provide guidance on how to consider generation and fuel switching projects.
- Description of methods (e.g., protocols, practices) that were performed, and will be performed, to manage and protect Person Information and to comply with the Information Practices Act.

Product:

- End-use Monitoring and Evaluation Reports

TASK 6: MARKET SCALING

The goal of this task is to fully implement the Business Plan (Subtask 2.1) for the energy efficiency retrofit model platform—including market facilitation activities, applying tools developed throughout the course of the project (e.g. Energy Plan, Financing Tools, Manuals, etc.)— to scale up integrated energy efficiency retrofit package adoption during and beyond the applied research and demonstration phases of the project.

The Recipient Shall:

- Develop a *Scaled Demand Contract* to serially procure a large volume of affordable housing projects using integrated energy efficiency retrofits. The terms of the contract will create a path to a long-term trajectory where:
 - Marginal costs of energy efficiency retrofits are equal to the amount financeable by utility cost savings.
 - Code and regulatory barriers are addressed to enable rapid adoption and installation of retrofits.
- Establish a supply side consortium inclusive of manufacturers and contractors for knowledge sharing, collaboration, training, and maintenance of the tools. Provide a *Supply Side Consortium Members List*, identifying manufacturers, contractors and others who will be participating in the consortium and will support the activities in the Business Plan and Task 6 after the grant term has ended.
- Create an ongoing market platform, outlined in a *Market Platform Charter* informed by the Business Plan developed in Subtask 2.1 and all the major learnings from the project, that serves as the organizing entity for the market on an ongoing basis.

EXHIBIT A

Scope of Work

Products:

- Scaled Demand Contract
- Supply Side Consortium Members List
- Market Platform Charter (draft and final)

TASK 7: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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

The Recipient shall:

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

Products:

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

EXHIBIT A

Scope of Work

TASK 8: EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

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

EXHIBIT A

Scope of Work

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

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

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: PROSPECT SILICON VALLEY

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

RESOLVED, that the Energy Commission approves Amendment 1 to Agreement EPC-17-040 with Prospect Silicon Valley to replace Prospect Silicon Valley as prime with subcontractor Rocky Mountain Institute. A three party agreement recital is included in the amended Scope of Work and delineates the roles and responsibilities for Prospect Silicon Valley, Rocky Mountain Institute, and the Energy Commission. This amendment also includes a budget reallocation between Prospect Silicon Valley and Rocky Mountain Institute; 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 12, 2019.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat