



GRANT REQUEST FORM (GRF)

A) New Agreement # EPC-19-036 (to be completed by CGL office)

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

C) Recipient's Legal Name	Federal ID Number
Rocky Mountain Institute	

D) Title of Project
Varieties of Prefabricated Envelope Solutions for CA Low-Rise Buildings

E) Term and Amount

Start Date	End Date	Amount
6/30/2020	3/31/2024	\$ 1,917,967

F) Business Meeting Information

ARFVTP agreements \$75K and under delegated to Executive Director

Proposed Business Meeting Date 6/10/2020 Consent Discussion

Business Meeting Presenter Adel Suleiman Time Needed: 5 minutes

Please select one list serve. EPIC (Electric Program Investment Charge)

Agenda Item Subject and Description:

Rocky Mountain Institute

ROCKY MOUNTAIN INSTITUTE. Proposed resolution approving agreement EPC-19-036 with Rocky Mountain Institute for a \$1,917,967 grant to develop, deploy, and assess the commercial feasibility of prefabricated exterior envelope panels for retrofitting multifamily buildings to increase energy efficiency and develop commercialization plans to reduce cost, time and complexity of panel design and installation. (EPIC funding) Contact: Adel Suleiman. (Staff Presentation: 5 minutes).

G) California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?

Yes (skip to question 2)

No (complete the following (PRC 21065 and 14 CCR 15378)):

Explain why Agreement is not considered a "Project":

2. If Agreement is considered a "Project" under CEQA:

a) Agreement **IS** exempt.

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:

This project is exempt under 14 CCR 15306 and 14 CCR 15301. The project involves the design, building, testing, installation, and temporary monitoring of



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pre-fabricated façade panels. The design, building, and testing work will all be done within existing manufacturing facilities already permitted for this type of work. The installation and monitoring work will be conducted on two existing multi-family buildings. Pre-fabricated façade panels will be installed to the exterior of the existing buildings with no demolition or removal of the existing exterior. This is just a façade retrofit. The retrofit may involve a little excavation at the building perimeter to insulate slab edge and/or attach to existing footings. It may also include the capping and removal of gas service. Temporary testing and measurement devices will be installed to measure various beneficial effects created by the installed panels. After testing, the testing and measurement devices will be removed. Because this project involves basic data collection and research that will not result in a serious or major disturbance to an environmental resource, it is exempt under 14 CCR 15306. Because this project involves design, building, and testing in existing manufacturing facilities permitted for this work, and then minor retrofits to two existing buildings, and none of the activities expand the use of the manufacturing facilities or the two multi-family building test sites, this project is also exempt under 14 CCR 15301.

- b) Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- Initial Study
- Negative Declaration
- Mitigated Negative Declaration
- Environmental Impact Report
- Statement of Overriding Considerations

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

Legal Company Name:	Budget
Association for Energy Affordability, Inc.	\$ 124,960
Redwood Energy	\$ 95,000
David Baker, an Architectural Corporation	\$ 184,007
Signetron, Inc.	\$ 150,000
RDH Building Science Inc.	\$ 160,000
Manufacturers (TBD)	\$ 128,000
SMT Research, LTD	\$ 0.00

I) List all key partners: (attach additional sheets as necessary)

Legal Company Name:
Rocky Mountain Institute
RDHBuilding Science, Inc.
Association for Energy Affordability
Redwood Energy
SMT Research, LTD



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J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	18-19	301.001F	\$1,917,967
			\$

R&D Program Area: EERO: Buildings

TOTAL: \$ 1,917,967

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Martha Campbell
 Address: 1111 Broadway
 City, State, Zip: Oakland, CA
 94607-4139
 Phone: 415-592-7622
 E-Mail: mcampbell@rmi.org

2. Recipient's Project Manager

Name: Amy Egerter
 Address: 21111 Broadway
 City, State, Zip: Oakland, CA
 94607-4139
 Phone: 510-- 343-6571
 E-Mail: aegerter@rmi.org

L) Selection Process Used

- Competitive Solicitation Solicitation #: GFO-19-307
- First Come First Served Solicitation Solicitation #:

M) The following items should be attached to this GRF

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

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

Exhibit A Scope of Work Rocky Mountain Institute

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2	X	Prototype Design
3		Prototype Production and Testing
4	X	Demonstration Site Systems Production and Installation
5		Demonstration Site Performance Measurement and Verification
6		Product Literature and Commercialization Plan Development
7		Evaluation of Project Benefits
8		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AEA	Association for Energy Affordability
ASTM	American Society for Testing and Materials
CAD	Computer-Aided Design
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
DBA	David Baker Architects
EPS	Expanded Polystyrene
GPS	Graphite Polystyrene
RDH	RDH Building Science
RE	Redwood Energy
RMI	Rocky Mountain Institute
TAC	Technical Advisory Committee
ZNC	Zero Net Carbon

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

A. Purpose of Agreement

The purpose of this Agreement is to develop, deploy, and assess the commercial feasibility of prefabricated exterior envelope packages for retrofitting low-rise multifamily buildings. The project will develop variations of prefabricated facades that could be applied based on varying existing conditions in California's low-rise multifamily buildings.

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

Rocky Mountain Institute

B. Problem/ Solution Statement

Problem

The decarbonization of California's building sector has fostered the need for global collaboration on emerging technologies. While deep carbon reducing retrofits are achievable in California's multifamily building sector, there have been a number of barriers to implementation. The majority of building retrofits excludes measures to enhance the performance of the building envelopes due to the complexity, cost, and relatively long payback of envelope improvements. There is a lack of simple, easy to install, building envelope retrofit measures. In addition, current market conditions, supply chain inefficiencies, and a lack of necessary technological solutions have made deep reducing carbon building envelope retrofits both time intensive and costly.

To scale the market and drive down the cost for zero net carbon (ZNC) retrofits, significant advances in the standardization in the manufacturing of prefabricated envelope panels for the and retrofit market are needed. European retrofit markets have successfully done this by creating unitized, prefabricated, airtight and high R-value panels that are hung off of the building exterior and include high performance windows and doors. These façade and roof panels can be installed in as little as one day. These types of prefabricated retrofit panels, however, are not available in the United States (US) or designed to serve California's building stock and climate.

Solution

To address this critical gap in the US market, the recipient will develop at least two variations of prefabricated envelope panel prototypes, which will be optimized for the most common multifamily building typology in California: a low-rise, wood-frame building. These panel types and their associated benefits will at a minimum include:

- High insulation and airtightness values
- Fireproof material
- Seismically robust
- Low embodied carbon material
- Lightweight
- Thin

The project team will then demonstrate each technology on one building each (a total of at least two multifamily buildings) in a larger multifamily complex. The project team will also leverage current research being performed under another EPIC agreement, EPC 17-040, that will create a matrix of all currently identified retrofit wall system technologies to determine whether an additional high potential retrofit wall system could be demonstrated as part of this grant. If any of the selected demonstration technologies, including products developed by current partners, do not meet the specifications in Table 1, they will be revised to meet the criteria. These exterior panel prototypes and field demonstrations will serve as a proof of concept to American manufacturers, potential fabricators, and technology startups and will illustrate what is possible and what types of products are needed as the retrofit industry scales over the coming years.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

Exhibit A Scope of Work Rocky Mountain Institute

- Design, fabricate, demonstrate, and validate at least two prefabrication panelized retrofit systems on a typical California low-rise multifamily building in order to:
 - Signal to US, particularly Californian, manufacturers that there is a market for prefabricated panelized retrofit solutions
 - Provide recommendations on how existing building envelope products, or products in development, can be optimized for Californian conditions
 - Guide product development to align with California's energy efficiency and GHG reduction goals
- Develop a commercialization plan for partner panel manufacturers that articulates how to develop production facilities that will meet California market demand and meet this demand as part of their standard service offering.
- Achieve the performance metrics listed in Table 1.

Table 1: Performance Metrics

Comparable Attribute			Manufacturers (TBD)	Evaluation Method
Installation Time			<1 week for whole building	Construction process monitoring
Tenant Disruption			Tenants do not have to vacate during installation	Construction process monitoring
Cost (\$/sqft façade; materials & installation)			\$30-45	Construction cost analysis post-construction
Wall R-value			Up to R-29	RDH testing
Roof R-value			Up to R-49	RDH testing
Air Change (ACH50)			1-2 ACH50	Blower door test
HVAC Load Reduction			20% reduction from current building usage	Building energy model
Prefabrication Ability			All panel elements are factory-finished and delivered ready to install	Panel manufacturer reporting; onsite inspections of panels
Panel Size			Able to design to architect specifications	onsite inspection of panels
Thickness			<=6"	onsite inspection of panels

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Finishing Options			Able to design to owner/architect specifications	N/A
Seismic/ Structural			Nonstructural; loads placed on existing structure	RDH testing
Technology Readiness Level (current minimum end of project target)			3-5 (4-6)	N/A

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of greater electricity reliability, lower costs, and increased safety. The prefabricated panel will reduce thermal loads of the building, thus reducing the heating and cooling cost for the tenants and increase hours of maintained comfort in times of power outages. The panels will also provide better thermal comfort, which will help the tenants during extreme climate events, such as extreme hot summer or cold winter, especially during any service outage.

Technological Advancement and Breakthroughs:³ This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California’s statutory energy goals by furthering the development of prefabricated high-performance retrofit panel systems that are optimized for California’s unique climates and multifamily building stock. The variations in panel design that will be tested and capture the range of building conditions, from complicated exterior facades or roofs, to the need for a more robust envelope upgrade. The prefabricated exterior panels will be able to meet California’s need for rapidly deployable deep retrofit solutions in the US market and provide lessons learned on the design and development of future iterations.

Agreement Objectives

The objectives of this Agreement are to:

- Design and construct and test prefabricated exterior facade panels for ZNC retrofits in California's low-rise multifamily buildings.
- Fabricate at least two panelized retrofit systems for installation at demonstration sites.
- Demonstrate the performance of prefabricated exterior panel systems per Table 1
- Develop a commercialization plan that enables manufacturers and/or fabricators to manufacture similar products at scale and establishes a service for carrying out these envelope retrofits.

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.

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III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V)**. Products that require a draft version are indicated by marking “**(draft and final)**” after the product name in the “Products” section of the task/subtask. If “(draft and final)” does not appear after the product name, only a final version of the product is required. With respect to due dates within this Scope of Work, “**days**” means working days.

The Recipient shall:

For products that require a draft version, including the Final Report Outline and Final Report

- Submit all draft products to the CAM for review and comment in accordance with the Project Schedule (Part V). The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- Consider incorporating all CAM comments into the final product. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product.
- Submit the revised product and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period, or approves a request for additional time.

For products that require a final version only

- Submit the product to the CAM for acceptance. The CAM may request minor revisions or explanations prior to acceptance.

For all products

- Submit all data and documents required as products in accordance with the following Instructions for Submitting Electronic Files and Developing Software:

- **Electronic File Format**

- Submit all data and documents required as products under this Agreement in an electronic file format that is fully editable and compatible with the Energy Commission’s software and Microsoft (MS)-operating computing platforms, or with any other format approved by the CAM. Deliver an electronic copy of the full text of any Agreement data and documents in a format specified by the CAM, such as memory stick or CD-ROM.

The following describes the accepted formats for electronic data and documents provided to the Energy Commission as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.

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- Text documents will be in MS Word file format, version 2007 or later.
 - Documents intended for public distribution will be in PDF file format.
 - The Recipient must also provide the native Microsoft file format.
 - Project management documents will be in Microsoft Project file format, version 2007 or later.
- **Software Application Development**
- Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:
- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
 - Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
 - Visual Studio.NET (version 2008 and up). Recommend 2010.
 - C# Programming Language with Presentation (UI), Business Object and Data Layers.
 - SQL (Structured Query Language).
 - Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
 - Microsoft SQL Reporting Services. Recommend 2008 R2.
 - XML (external interfaces).

Any exceptions to the Electronic File Format requirements above must be approved in writing by the CAM. The CAM will consult with the Energy Commission's Information Technology Services Branch to determine whether the exceptions are allowable.

MEETINGS

Subtask 1.2 Kick-off Meeting

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

The Recipient shall:

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

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

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

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

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

The CAM shall:

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

Recipient Products:

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

CAM Product:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive Energy Commission funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the Energy Commission and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

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

The Recipient shall:

- Prepare a *CPR Report* 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.

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- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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).

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- Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.
- "Surviving" Agreement provisions such as repayment provisions and confidential products.
- Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide *All Draft and Final Written Products* on a CD-ROM or USB memory stick, organized by the tasks in the Agreement.

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

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

Products:

- Progress Reports
- Invoices

Subtask 1.6 Final Report

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

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.*)

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Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

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

Subtask 1.6.2 Final Report

The Recipient shall:

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

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the CAM, unless the CAM specifies a longer time period or approves a request for additional time.

- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

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

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

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

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

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

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- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Products:

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

Subtask 1.8 Permits

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

The Recipient shall:

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

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

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

Products:

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

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.

Exhibit A

Scope of Work

Rocky Mountain Institute

The Recipient shall:

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

Products:

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

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

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

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

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

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Public interest market transformation implementers;
- Product developers relevant to the project;
- 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.

Exhibit A

Scope of Work

Rocky Mountain Institute

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.

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 insure a long-term perspective on decision-making and progress toward the project's strategic goals.

Products:

- TAC Meeting Schedule (draft and final)

Exhibit A Scope of Work Rocky Mountain Institute

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

IV. TECHNICAL TASKS

TASK 2: PROTOTYPE DESIGN

The goal of this task is to identify how the panel manufacturers will need to design their retrofit panels to meet California market needs.

SUBTASK 2.1: Design Specifications

The goal of this subtask is to define the engineering and performance specifications needed to achieve the performance targets in Table 1.

The Recipient Shall:

- Review the performance specifications set forth in Table 1 and those produced under EPC 17-040 in their Summary of Baseline, BAU, and REALIZE Retrofit Packages deliverable with regards to criteria listed in Table 1.
- Prepare a comprehensive list of *Design Specifications* for each prototype system manufacturer to include, but not limited to, engineering and performance specifications needed to achieve the goals of this project, installation time, cost, thermal performance, hygrothermal performance, structural performance, and airtightness.

Products:

- Design Specifications (one per manufacturer)

SUBTASK 2.2: Panel Design

The goal of this subtask is to update the panel system designs to support engineering and performance requirements identified in Subtask 2.1.

The Recipient Shall:

- Develop a panel concept design for each manufacturer informed by the current panel design and the Design Specifications from subtask 2.1. that will be used for the analysis conducted in Subtasks 2.3 and 2.4.
- Prepare the *Panel Concept Designs* to be used in Subtasks 2.3 and 2.4 and include conceptual design drawings, materials specifications, and attachment details.

Products:

- Panel Concept Designs (one per manufacturer)

SUBTASK 2.3: Building Science Performance Modeling

The goal of this subtask is to understand and optimize the thermal, hygrothermal, air barrier, constructability, and waterproofing performance of the proposed retrofit panels for a typical low-rise multifamily building.

The Recipient shall:

- Create a THERM model for each demonstration site for each of the attached retrofit panel variations.

Exhibit A Scope of Work Rocky Mountain Institute

- Identify, evaluate, and propose solutions for potential thermal, hygrothermal, air barrier, constructability, and waterproofing issues.
- Determine via modeling and calculations whether each panel option meets performance goals identified in Subtask 2.1 and Table 1.
- Summarize the findings and recommendations in a *Building Science Performance Report* for each panel manufacturer that will be used to improve panel design.

Products:

- Building Science Performance Reports (one per manufacturer)

SUBTASK 2.4: Structural Performance Calculations

The goals of this subtask is to assess and optimize the structural panel attachment systems used to connect the panels to the existing building and to ensure that each panel variation meets California structural code requirements when attached to low-rise multifamily buildings.

The Recipient shall:

- Provide structural engineer calculations for each demonstration site with the retrofit panel variations attached.
- Use the calculations to identify, evaluate, and propose solutions for any issues relating to the panel attachments.
- Use the calculations to predict compliance with California structural code requirements.
- Summarize the findings and recommendations in a *Structural Performance Report* for each manufacturer that will be used to improve panel design. The report should include structural engineer calculations, issues and solutions, and discussion of whether the attachments comply with the California structural code requirements.

Products:

- Structural Performance Reports (one per manufacturer)

SUBTASK 2.5: Final Prototype Design

The goal of this subtask is to incorporate the findings of previous Subtasks in Task 2 into a revised retrofit panel design for each panel variation that will be fabricated for prototype testing. If the panel prototype design does not meet the criteria set forth in Table 1, the manufacturer will need to revise their designs before proceeding to prototype fabrication.

The Recipient shall:

- Produce a *Final Prototype Design Report* that incorporates the findings from the building science and structural modeling into the drawings and specifications and includes information on the final design. If the Final Prototype Design does not meet criteria set forth in Table 1, the manufacturer will revise their designs in order to meet those criteria. The issues, changes and revisions will be delineated in the report.
- Prepare CPR Report #1 and participate in CPR meetings per subtask 1.3

Products:

- Final Prototype Design Report (one per manufacturer)
- CPR Report #1

Exhibit A

Scope of Work

Rocky Mountain Institute

TASK 3: PROTOTYPE PRODUCTION AND TESTING

The goal of this task is to prototype each of the facade systems and conduct the necessary testing required for demonstration site deployment.

SUBTASK 3.1: Panel Testing and Certifications

The goal of this subtask is to identify certifications, testing, and installation partners needed for the panel products to be installed in California and reduce permitting times.

The Recipient shall:

- Conduct a review of codes and standards relating to facade systems.
- Identify certifications and testing needed to meet California codes and standards for the panel manufacturers.
- Produce a *Testing and Certification Summary* that discusses the necessary testing and certifications needed for each panel manufacturer to produce and install their products in California.
- Select certified installers for each manufacturer and complete a *Certified Installers Agreement*. Provide copies of each agreement.

Products:

- Testing and Certification Summary
- Certified Installers Agreement

SUBTASK 3.2: Panel System Prototyping

The goal of this subtask is to fabricate, test, and report findings for each prototype panel system to inform site installation and demonstration.

The Recipient shall:

- Fabricate functional prototype facade panels according to the revised panel Prototype Designs (Subtask 2.5)
- Complete the testing items outlined in the Testing and Certification Summary (Subtask 3.1).
- Produce *Photos of Functional Prototype Facade Panels* once completed.
- Conduct system tests and communicate testing results to manufacturers in a *Test Results Report*.

Products:

- Photos of Functional Prototype Facade Panels
- Test Results Report (one per manufacturer)

TASK 4: DEMONSTRATION SYSTEMS PRODUCTION AND INSTALLATION

The goal of this task is to fabricate and install the variations of retrofit panels on the demonstration buildings.

SUBTASK 4.1: Produce and Deliver Demonstration Site Systems

The goal of this subtask is to accurately model the existing conditions of the demonstration site, configure panel layouts and drawings for the sites, fabricate the systems and deliver the demonstration systems to the demonstration project site.

Exhibit A

Scope of Work

Rocky Mountain Institute

The Recipient shall:

- Revise the panel prototype designs as dictated by testing results (Subtask 3.2).
- Optimize 3D scanning workflows using 3D CAD modeling software to develop a *Panel Configuration and Layout Report* that describes the scanning guidelines and procedures and that verifies and precision-tunes envelope panel dimensions and tolerances for factory production.
- Develop a *Retrofit Drawing Set* for each manufacturer and demonstration site. The purpose is to communicate intent of the panelized facade retrofit for use by building officials and the general contractor/builder, including demolition plan, panel layout, panel installation details and architectural visualization.
- Provide stamped structural drawings and calculations for *Retrofit Drawing Set* of the final design and cladding strategy and include all permits by local building officials.
- Fabricate the panels for the demonstration site buildings and provide *Photos of Demonstration Site Retrofit Panels* prior to installation.

Products:

- Panel Configuration and Layout Report
- Retrofit Drawing Sets
- Photos of Demonstration Site Retrofit Panels

SUBTASK 4.2: Perform Field Demonstrations

The goal of this subtask is to oversee the installation of the exterior retrofit facade panels 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:

- Verify that all permits have been received.
- Review submittals and work with contractors to ensure that they understand all elements of the design.
- Perform pre-installation and mid-construction site visits to ensure quality control.
- Perform on-site post installation verifications to ensure the as-built conditions match the design documents and to confirm installation quality.
- Conduct commissioning and quality control for each demonstration site
- Prepare *Commissioning Reports* to discuss the commissioning plan for each site and the results
- Prepare *CPR Report #2* and participate in CPR meetings per subtask 1.3

Product:

- Commissioning Reports
- CPR Report #2

TASK 5: DEMONSTRATION SITE PERFORMANCE MEASUREMENT AND VERIFICATION

The goal of this task is to collect high-resolution performance data to validate the performance goals. Energy-related items will be measured and verified under EPC 17-040 scope, and envelope performance factors will be measured and verified under this task.

Exhibit A

Scope of Work

Rocky Mountain Institute

The Recipient shall:

- Develop a *Building Enclosure Validation Plan* that outlines the process to validate the thermal, air leakage, moisture, impacts on retrofitted facades, performance, effectiveness of installation and attachment method performance of the envelope panels post-installation, in conjunction with EPC 17-040 tasks to ensure no overlapping scope.
- Conduct the testing outlined in the *Building Enclosure Validation Plan* to record the performance of the installed panels.
- Perform air leakage testing to include quantitative whole building air leakage testing in general conformance with the methods described in ASTM E779 to validate assumed air leakage rates in the design energy models.
- Perform qualitative air leakage testing in general conformance with the methods described in ASTM E1186 which includes visualization of leakage paths using theatrical smoke and infrared thermography. Qualitative air leakage testing will be used to improve perimeter detailing.
- Perform water testing to include at least one window test in general conformance with the methods described in ASTM E1105 to validate window and rough opening flashing performance.
- Produce an *Envelope Performance Evaluation Report* that details the results of the envelope performance completed in this task, identifies areas for performance improvement and suggested remedies, and whether the performance metrics identified in Table 1 were achieved.

Products:

- Building Enclosure Validation Plan
- Envelope Performance Evaluation Report

TASK 6: PRODUCT LITERATURE AND COMMERCIALIZATION PLAN DEVELOPMENT

The goal of this task is to create a set of documents to prepare each panel variation for wider market adoption in California.

SUBTASK 6.1: Product Literature Development

The goal of this subtask is to produce retrofit panel specifications, drawings, installation instructions, and other relevant informative documents that are product-specific and can be distributed among the architecture, engineering, construction and codes and standards community in California to enable faster adoption of retrofit facade panels.

The Recipient shall:

- Develop draft *Product Literature* that includes panel drawings, connection details, typical sizes, performance specifications, and materials that can be published and made readily available to the architecture, engineering, construction and codes and standards community in California.
- Finalize *Product Literature* based on comments from California's architecture, engineering, construction, real estate and codes and standards community

Products:

- Product Literature (draft and final)

Exhibit A

Scope of Work

Rocky Mountain Institute

SUBTASK 6.2: Commercialization Plan

The goal of this subtask is to develop a technology commercialization strategy relative to California for each of the system manufacturers. This will outline a plan for advanced manufacturing and delivery, an understanding of production volume requirements for cost reduction, and a strategy for further manufacturer capitalization should that be required for implementation of the commercialization plan.

The Recipient shall:

- Investigate and assess advanced manufacturing and delivery techniques used abroad and in the US that could be leveraged as part of exterior retrofit panel production for California.
- Based on demonstration site production, delivery, and construction costs and time, determine key areas for cost and installation reduction, and the magnitude of reduction possible.
- Conduct a business model analysis based on current production costs, cost reduction potential, and projected sales to determine a realistic pathway for commercialization of the panel systems in California.
- Summarize all recommendations and findings from this subtask in a draft *Commercialization Plan* that lays out a business plan and service model for deploying the demonstrated prefabricated exterior panels on low-rise multifamily buildings in California.
- Solicit comments from key manufacturing partners on the Commercialization Plan and incorporate them in a final Commercialization Plan

Products:

- Commercialization Plan (draft and final)

TASK 7 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.

Exhibit A Scope of Work Rocky Mountain Institute

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

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

Products:

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

TASK 8 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.

Exhibit A

Scope of Work

Rocky Mountain Institute

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.
- Develop *Presentation Materials* for an Energy Commission- sponsored conference/workshop(s) on the project as requested by CAM
- Participate in annual EPIC symposium(s) sponsored by the California Energy Commission as requested by CAM
- Provide at least (6) six *High Quality Digital Photographs* (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION - RE: ROCKY MOUNTAIN INSTITUTE.

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-19-036 with Rocky Mountain Institute for a \$1,917,967 grant to develop, deploy, and assess the commercial feasibility of prefabricated exterior envelope panels for retrofitting multifamily buildings to increase energy efficiency and develop commercialization plans to reduce cost, time and complexity of panel design and installation, and to adopt staff's determination that this action is exempt from CEQA. The prefabricated panel will be installed in a multifamily building located in a disadvantaged or low-income community in Northern California. and

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

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 CEC held on June 10, 2020.

AYE:

NAY:

ABSENT:

ABSTAIN:

Cody Goldthrite
Secretariat