

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

New Agreement EPC-15-076 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
ERDD	Diana Gonzalez	51	916-445-5309

Recipient's Legal Name	Federal ID Number
Zero Net Energy Alliance, Inc.	47-5562137

Title of Project
Richmond Advanced Energy Community Project

Term and Amount	Start Date	End Date	Amount
	6/1/2016	3/30/2018	\$ 1,480,111

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

Proposed Business Meeting Date	5/17/2016	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Anthony Ng	Time Needed:	5 minutes

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

Agenda Item Subject and Description

Proposed resolution approving Agreement EPC-15-076 with Zero Net Energy (ZNE) Alliance for a \$1,480,111 grant to facilitate adoption of a comprehensive integrated policy, planning, and financing framework to transform the City of Richmond into a Zero Net Energy Community. As part of the project, ZNE Alliance will also facilitate the planning and permitting of approximately 20 abandoned homes to be converted into affordable ZNE homes.

California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?
 Yes (skip to question 2) No (complete the following (PRC 21065 and 14 CCR 15378)):
 Explain why Agreement is not considered a "Project":
 Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because

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: 14 CCR §15301, 15302, 15306
 Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:

14 CCR Section 15301 Minor Alteration of Existing Structures Exemption and 14 CCR Section 15302 Reconstruction of Existing Structures Exemption: This agreement will fund the permitting of approximately twenty 900 to 1500 square foot existing, abandoned residential homes to be renovated to zero-net energy structures. Specifically, equipment such as high-efficiency heat pumps and water heaters, smart thermostats, high R-value insulation, low-flow toilets and fixtures, and double or triple pane windows may be installed inside the homes. Small solar thermal and solar PV panels may be installed on the rooftops of the homes. These changes will not alter or expand the existing use of the homes, will not result in an expansion of the floor area of the homes, will not result in a scenic disturbance and will not have a significant effect on the environment.

14 CCR Section 15061 Common Sense Exemption and 14 CCR Section 15306 Information Collection Exemption: This agreement will fund information collection, research, analysis and evaluation activities related to existing processes, planning, and funding opportunities for possible use by advanced energy development efforts without the possibility of having a significant effect on the environment because it consists of information gathering, analysis, and sharing, and which will not result in a serious or major disturbance of an environmental resource.

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

Check all that apply

- | | |
|---|---|
| <input type="checkbox"/> Initial Study | <input type="checkbox"/> Environmental Impact Report |
| <input type="checkbox"/> Negative Declaration | <input type="checkbox"/> Statement of Overriding Considerations |
| <input type="checkbox"/> Mitigated Negative Declaration | |

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List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)	
Legal Company Name:	Budget
Olivine, Inc.	\$ 270,121
City of Richmond	\$ 255,000
All Business Machines, Inc.	\$ 40,000
Energy Solutions International	\$ 569,990
Marin Clean Energy	\$ 30,000
Sustainable Endowments Institute	\$ 60,000
Sharon Tobar	\$ 65,000
Stacey Hobart	\$ 40,000
Laura Manz	\$ 20,000
Richmond Community Foundation	\$ match only
Dyett and Bhatia	\$ match only

List all key partners: (attach additional sheets as necessary)	
Legal Company Name:	
Richmond Community Foundation	

Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	14-15	301.001B	\$1,480,111
			\$
R&D Program Area: EDMFO: EDMF		TOTAL:	\$1,480,111
Explanation for "Other" selection			
Reimbursement Contract #:	Federal Agreement #:		

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Richard Schorske			Name:	Richard Schorske		
Address:	826 Point San Pedro Rd			Address:	826 Point San Pedro Rd		
City, State, Zip:	San Rafael, CA 94901-2535			City, State, Zip:	San Rafael, CA 94901-2535		
Phone:	415-870-9316 /	Fax:	- -	Phone:	415-870-9316 /	Fax:	- -
E-Mail:	richards@dsnetwork.org			E-Mail:	richards@dsnetwork.org		

Selection Process Used		Solicitation #:
<input checked="" type="checkbox"/> Competitive Solicitation		GFO-15-312
<input type="checkbox"/> First Come First Served Solicitation		

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
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Exhibit A Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR	Task Name
1	N/A	General Project Tasks
2	X	Local Planning and Policy Development
3		Local Program Development
4		Case Study
5		Evaluation of Project Benefits
6		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
AEC	Advanced Energy Community
BESO	Building Energy Savings Ordinance. This is a combination and expansion of the Residential and Commercial Energy Conservation Ordinances.
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CITY	City of Richmond
CPR	Critical Project Review
CPUC	California Public Utilities Commission
DER	Distributed Energy Resource
EV	Electric Vehicle
GRF	Green Revolving Fund
GRITS	Green Revolving Investment Tracking System 1.2
IDSM	Integrated Demand-Side Management
IMC	Incremental Measure Cost
MCE	Marin Clean Energy

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RCF	Richmond Community Foundation
Reach Code	Public Resources Code Section 25402.1(h) 2 and Section 10-106 of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards. This process allows local governmental agencies to adopt and enforce energy standards for newly constructed buildings, additions, alterations, and repairs to existing buildings provided the Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6.
SIB	Social Impact Bond
TAC	Technical Advisory Committee
ZERO-CA	California Homebuilder Foundation Zero Energy Residential Optimization-Community Achievement (ZERO-CA) project was funded in through EPIC GFO 15-308. The ZERO-CA project analyzes and prioritizes above-code energy savings measures for ZNE new construction in key California climate zones and develops cost-effective measure packages for each climate zone. Project partner Energy Solutions is a subcontractor on this project leading plug load modeling. This work will be leveraged to the extent possible for the Richmond AEC project.
ZNE	Zero Net Energy

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

A. PURPOSE OF AGREEMENT

The purpose of this Agreement is to fund the development of Zero Net Energy (ZNE), Distributed Energy Resource (DER) and Electric Vehicle (EV) policy, planning and financing models in the City of Richmond.

B. PROBLEM/ SOLUTION STATEMENT

Problem

Due largely to limitations and challenges in design, financing, available professional expertise, and scale-up strategies, zero net energy (ZNE) communities have not yet been developed on a large scale, or applied to infill development. The majority of ZNE buildings have been deployed in more affluent areas, which can afford the initially steep ZNE learning curve and associated early-stage technologies. Key barriers to implementing integrated demand-side management (IDSM) in existing buildings are lack of awareness by building owners and tenants of the many feasible opportunities to reduce energy costs, as well as the widely recognized split incentives

Exhibit A Scope of Work

for landlords and tenants¹. Local governments are the first line of support during any emergency. However, despite that most essential services are highly dependent upon energy; many emergency preparedness plans do not fully address the challenge of ensuring energy availability for essential operations across short-term (multi-hour) and longer-term (multi-day) grid outages. Disadvantaged communities have been slow to gain the benefits of widespread electric vehicle (EV) deployment due to cost, awareness of the EV value proposition, resource availability, lack of EV charging for public use and for multi-unit and rental properties, and a general disconnect regarding the connection between diesel emissions and public health (most notably asthma incidence and severity).

Solution

Zero Net Energy Alliance, Inc. (Recipient) will develop and facilitate adoption of ZNE Reach Codes, a ZNE Ordinance, and an enhanced Building Energy Saving Ordinance (BESO) model that includes an online data system and tenant improvement requirements for low-income renters. The Recipient will develop an Energy Assurance Strategy and an EV Procurement Framework to justify implementation activities. The Recipient will work with local program administrators to develop programs and financing mechanisms that offset incremental project costs associated with implementing ZNE, IDSM, DER and EV projects. The Recipient will plan and permit a large-scale ZNE redevelopment project using an innovative, first-of-its-kind social impact bond (SIB) to purchase vacant, blighted properties, and local program and GRF funds to deploy the most cost-effective high-efficiency technologies and designs.

C. GOALS AND OBJECTIVES OF THE AGREEMENT

Agreement Goals

The goals of this Agreement are to:

1. Facilitate a comprehensive energy reduction strategy through adoption of progressive energy policies, such as ZNE building codes and zoning ordinances;
2. Transform abandoned, blighted homes into affordable ZNE homes;
3. Accelerate local clean energy development which minimize new energy infrastructure costs, and enable renewable energy integration and increased energy resilience;
4. Accelerate adoption and grid-integration of EVs; and
5. Educate and engage local governments, developers, builders, and other stakeholders on how to create cost-effective ZNE policies, programs, and projects using the ZNE Community Toolkit.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefit of greater electricity reliability, lower costs, and increased safety. Specifically the project will: a) facilitate adoption of

¹ The “split incentive” refers to situations in leased building space where the building owner owns the energy consuming assets however the tenant is responsible for the associated energy costs. This creates a barrier because tenants do not want to invest in something that they do not own, and owners do not want to invest in something that has no impact on their profitability.

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.PDFhttp://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

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a ZNE building code and ordinance to improve the efficiency of new residential single family, multifamily and mixed use developments; b) facilitate adoption of an enhanced BESO model; c) plan and permit a large-scale ZNE redevelopment project using a first-of-its-kind social impact bond to purchase abandoned properties and facilitate their renovation; d) recommend permitting streamlining best practices that encourage ZNE development; e) develop an Energy Assurance Strategy to ensure critical power needs are met during emergencies and integrate community DERs onto the grid; f) develop an Electric Vehicle Action Plan and Procurement Framework to scale adoption of medium- and heavy-duty EVs in alignment with California Air Resources Board's 2016 and 2017 goals to "accelerate penetration of zero emission trucks, transit buses, shuttles, and transportation refrigeration units;"³ g) develop local programs that complement the City of Richmond's (City) progressive energy policies; and h) conduct outreach and education to accelerate adoption of the replicable tools and models developed and refined through the project.

Technological Advancement and Breakthroughs:⁴ This Agreement will support the development and commercialization of technological advancements and breakthroughs that overcome barriers to the achievement of the State of California's statutory energy goals by aligning with Strategy 1.7 from Assembly Bill (AB) 758, "Local Government Leadership," and implementing five of the six "2016 Critical Path and Priorities" identified in the California's New Residential Zero Net Energy Action Plan 2015-2020.⁵ This Agreement will demonstrate a new financing mechanism – a SIB – for combating urban blight, and integrate that model with a green revolving fund (GRF) to advance redevelopment projects to ZNE.

The Agreement will provide more cost-effective strategies for procuring DERs and EVs within the community by advancing knowledge on grid integration opportunities that provide new value streams and public health benefits. The replicable models developed through this project overcome barriers to achieving the State's 2020 ZNE and energy storage goals, and 2025 EV goal, and facilitate compliance with Assembly Bill 802's data reporting requirements and Assembly Bill 793's low-income requirements.

Agreement Objectives

The objectives of this Agreement are to:

1. Facilitate adoption of a ZNE policy framework by the City, including Reach Codes for residential new construction and major alterations, and a ZNE zoning ordinance for new mixed-use and multifamily developments;
2. Plan and permit approximately 20 of the City's abandoned and vacant buildings to become ZNE homes available to working families via the First-time Home Buyers' Program;⁶
3. Facilitate adoption of an enhanced Building Energy Saving Ordinance (BESO) for City of Richmond's existing building stock that includes requirements for energy-saving tenant

³ California Air Resources Board Sustainable Freight Strategy, http://dot.ca.gov/hq/tpp/offices/ogm/cs_freight_action_plan/main.html

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.

⁵ The 2016 Critical Path and Priorities include: 1) Local government early adopter program, 2) ZNE-specific financing, 3) New ZNE incentives, 4) Multifamily, low-income incentives, and 5) Local government ZNE Reach Code adoption and support.

⁶ <http://www.richmondcf.org/community-initiatives/sparkpoint>

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- improvements at low-income properties and the use of a scalable software tracking system to support implementation and compliance;
4. Develop an Energy Assurance Strategy that ensures that critical public services remain operational during emergencies, enabling microgrid operations from community distributed energy resources (DER);
 5. Develop an EV Procurement Framework and Action Plan to increase the use of EVs in the City and assist public and private fleet managers in accelerating EV adoption;
 6. Design a ZNE Early Adopters Program, Low-income Program, and Community DER Program to provide support for the implementation of progressive local policies.
 7. Establish a Green Revolving Fund (GRF) to provide earmarked incremental funding for ZNE and IDSM projects throughout the community;
 8. Conduct three workshops – one each in Northern, Central, and Southern California – to educate public and private stakeholders on how to leverage the Richmond Advanced Energy Community (AEC) Project’s policy, program and financial models to accelerate ZNE development and other AEC goals.

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:

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Instructions for Submitting Electronic Files and Developing Software:

○ **Electronic File Format**

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

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

- Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
- Text documents will be in MS Word file format, version 2007 or later.
- Documents intended for public distribution will be in PDF file format.
- The Recipient must also provide the native Microsoft file format.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

○ **Software Application Development**

Use the following standard Application Architecture components in compatible versions for any software application development required by this Agreement (e.g., databases, models, modeling tools), unless the CAM approves other software applications such as open source programs:

- Microsoft ASP.NET framework (version 3.5 and up). Recommend 4.0.
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5.
- Visual Studio.NET (version 2008 and up). Recommend 2010.
- C# Programming Language with Presentation (UI), Business Object and Data Layers.
- SQL (Structured Query Language).
- Microsoft SQL Server 2008, Stored Procedures. Recommend 2008 R2.
- Microsoft SQL Reporting Services. Recommend 2008 R2.
- XML (external interfaces).

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

MEETINGS

Subtask 1.2 Kick-off Meeting

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

The Recipient shall:

- Attend a "Kick-off" meeting with the CAM, the Commission Agreement Officer (CAO), and any other Energy Commission staff relevant to the Agreement. The Recipient will bring its Project Manager and any other individuals designated by the CAM to this

Exhibit A Scope of Work

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 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.

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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

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

Exhibit A Scope of Work

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.

Recipient 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.

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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 Products:

- 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.)

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

Recipient 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.

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The Recipient shall:

- Prepare a *Match Funds Status Letter* that documents the match funds committed to this Agreement. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.
If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter:
 - A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the source (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
 - A copy of a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM of receipt of additional match funds.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the Agreement. Reduction of match funds may trigger a CPR meeting.

Recipient 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

Exhibit A Scope of Work

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.

Recipient 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).

Recipient 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:

Exhibit A Scope of Work

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

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

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

The Recipient shall:

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

Recipient 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.

Exhibit A Scope of Work

The Recipient shall:

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

Products:

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

IV. TECHNICAL TASKS

TASK 2: LOCAL PLANNING AND POLICY DEVELOPMENT

The goals of this task are to: 1) develop policy and planning models that accelerate progress toward the State's 2020 ZNE goal, 2) develop energy assurance planning and community DER strategies to increase resilience and public health within the community, and 3) develop a tool to evaluate and prioritize EV-related investment opportunities.

Subtask 2.1: Develop ZNE Policy Framework

The goal of this task is to establish a policy model that local governments can adopt during a zoning ordinance update to maximize residential ZNE with little incremental cost.

The Recipient shall:

- Conduct a Critical Project Review (CPR) meeting. The CPR meeting will 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.
- 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.

Exhibit A Scope of Work

- Present the CPR Report and any other required information at each CPR meeting.
- Coordinate and collaborate with the CAM and other Energy Commission staff, including periodic check-in points with the CAM at the Critical Project Review (CPR) meeting, key milestones, and decision-points in the development of an Advanced Energy Community.
- Leverage Energy Solutions' role on the Zero Energy Residential Optimization-Community Achievement (ZERO-CA) project to prioritize above-code energy saving measures for ZNE new construction and cost-effective measure packages for Richmond's climate zone.
- Assess the applicability of the ZERO-CA analysis and prioritization for whole-home energy retrofits.
- Evaluate the energy savings and cost effectiveness of Richmond's building code ordinance. To complete this task, the project team will:
 - Compare the energy performance and cost of buildings that just meet the California building code to the expected energy performance and cost of building that meet the local ordinance;
 - Customize the methodology that the Energy Commission uses to evaluate code change proposals for Part 6 of Title 24 for Richmond's scenario;
 - Leverage existing analyses from all relevant and available sources whenever possible, including information and data from rulemaking for revisions to Part 6 of Title 24 and CALGreen, information from IOU Codes and Standards Reach Code and Local Government Program, and analyses that other local jurisdictions have completed when adopting local building standards.
- Evaluate opportunities for expansion of California's existing Title 24 Building Code EV-ready requirements for multi-family buildings and commercial buildings.
- Develop a *Reach Code and Ordinance Proposal Template*. Reports must include a cost-effectiveness study that provides the basis of the local government's determination that the proposed Reach Code standards are cost-effective.
- Analyze opportunities for modification to the City of Richmond's zoning ordinance and permitting processes to maximize ZNE penetration of both new construction and existing multi-family and mixed-use buildings, and prepare *Reach Code and Ordinance Proposal Report*. Examples may include, but are not limited to: tradeoffs in permitting, relaxing height, setbacks, parking requirements, and allowing increased density and buildings to be reoriented to maximize solar potential.
- Develop *Permit Streamlining and Soft Cost Reduction Policy Recommendations* documenting the process efficiencies (time and money saved) enabled by a suite of proposed streamlined permitting processes. The first draft of the recommendations will be developed at the onset of the project and vetted with the local development community through Task 2.2.
- Develop *Modified Permit Applications*. This includes adding key project identifiers to quickly and clearly signify to the Richmond Planning and Building departments that a permit application should be streamlined.
- Develop *Reach Code Support Presentations* to be presented at meetings between the City of Richmond and key project stakeholders.
- Create a *Policy Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- CPR Report

Exhibit A Scope of Work

- Task Products (draft and/or final as specified in the task)
- Reach Code and Ordinance Proposal Template (draft and final)
- Reach Code and Ordinance Proposal Report (draft and final)
- Permit Streamlining and Soft Cost Reduction Policy Recommendations (Draft and final)
- Modified Permit Applications
- Reach Code Support Presentations
- Policy Lessons Learned Document

Subtask 2.2: Plan and Permit Large-Scale ZNE Redevelopment Project

The goals of this task are to: 1) develop ZNE building design and technology solutions applicable to Richmond abandoned homes, 2) work with the Richmond Community Foundation (RCF) and selected builders to determine project soft costs and incremental technology and design costs associated with achieving ZNE, 3) permit approximately twenty abandoned homes purchased using the SIB to be renovated to ZNE; demonstrating the proposed streamlined permitting model, 4) recommend permit streamlining and soft cost reduction policies.

The Recipient shall:

- Leverage ZERO-CA project and cost-effectiveness analysis from Task 2.1 to identify cost-effective ZNE building technologies and design alternatives for the Richmond abandoned homes.
- Develop a *ZNE Building Technology and Design Alternatives Specification Document* identifying prototypical technologies and designs suitable for the Richmond abandoned homes redevelopment.
- Review building designs for the abandoned home renovations.
- Educate contractors on the ZNE technology and design alternatives, and the proposed Permit Streamlining and Soft Cost Reduction Policies which may be adopted by the City to mitigate costs associated with compliance.
- Determine the incremental design and technology costs associated with meeting the proposed energy policies. This data will be sourced from the contractors, RCF, and manufacturers.
- Work with the contractors to finalize the ZNE design for each building. This will include:
 - Obtaining, evaluating and negotiating pricing for building technologies (appliances, lighting, HVAC, water heating, insulation, solar photovoltaic (PV), etc.),
 - Selecting the final building measure list,
 - Supporting development of *Report of Construction Documents* being installed⁷, and submitting copies to the CAM
 - Developing and submitting Permit Applications, and providing *Copies of Permit Applications* to the CAM,
 - Facilitating necessary education and training for the contractor's staff.
- Create a *Map of the Location of Homes* that will be renovated to ZNE for inclusion in the project's Master Community Design.
- Support the permit review and approval process.
- Refine and package the *SIB Financial Model and User Manual*. The User Manual will include the following sections:

⁷ Construction documents help translate project needs into a buildable format that can be universally understood within the construction industry, allow the owner to put the project out for bid and to obtain permits from local authorities, and provide comprehensive instructions to contractor as to how the project should be constructed.

Exhibit A Scope of Work

- Summary of key project inputs,
- Project stakeholders and ownership models,
- Financing structures and risk assessment basics,
- Interpreting results
- Disclaimers—model limitations and unknowns
- Develop a *How to Establish a GRF Guidebook* documenting the purpose, administrative issues, and steps a local government can take to establish a GRF in their community.
- Create a *Planning and Permitting Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- ZNE Building Technology and Design Alternatives Specification Document
- Report of Construction Documents (draft and final)
- Copies of Permit Applications
- Map of the Location of Homes
- SIB Financial Model and User Manual (draft and final)
- How to Establish a GRF Guidebook (draft and final)
- Planning and Permitting Lessons Learned Document

Subtask 2.3: Develop and Adopt Building Energy Standards Ordinance (BESO)

The goal of this task is to develop and adopt a local BESO that: 1) Systematically assesses the energy consumption of the City of Richmond's existing building stock; 2) Provides a program pipeline for whole-building retrofits, 3) Utilizes a custom software system to support implementation and compliance tracking; 4) Complies and integrates with the implementation of the State's Existing Buildings Energy Efficiency Action Plan, including the non-residential benchmarking and disclosure requirements; and 5) Includes tenant improvement requirements for low-income properties, specifically Section 8 and Low-Income Housing Tax Credit (LIHTC) housing.

The Recipient shall:

- Review existing BESO models (e.g., Berkeley, CA; Austin, TX; San Francisco, CA; Seattle, WA; Boston, MA).
- Develop, analyze and evaluate benefits and costs of all pertinent design elements and features, such as scope of building stock, audit reporting benchmarks (DOE's Homescore, CA's HERS II, BPI, etc.), breadth of the assessment, actions required following an assessment, opportunities for the funding of assessments, and the needs and circumstances of a disadvantaged community.
- Develop policy design options and recommendations for a BESO covering the City of Richmond's residential, both single family and multi-family, and non-residential buildings.
- Evaluate opportunities to integrate with and/or modify Richmond's existing Residential Rental Inspection Program as a means of facilitating compliance.
- Develop requirements for residential, non-residential, and low-income properties. At a minimum, requirements may include, but not be limited to:
 - Property owners to complete an energy assessment when a property is to be sold or transfer responsibility to the new property owner/operator; for certain building types (such as large commercial) building operators may be required to complete an energy assessment by a certain date.
 - Energy assessment data and findings to be logged in a database.

Exhibit A Scope of Work

- Landlords of low-income properties to implement energy assessments at all of their properties either at the time of tenant turnover or by a certain date, and implement all cost-effective measures (such as replacing inefficient lighting and old appliances).
- Develop a *BESO Proposal*. The draft BESO Proposal will include the following sections: Executive Summary, Summary of Findings, Methodology and Assumptions, Energy Savings, Cost Analysis, Proposed Ordinance Language, and References.
- Develop *Implementation and Compliance Materials* for administrators and building owners.
- Support ordinance adoption and implementation. This support will primarily consist of attending meetings as needed to support the adoption of the BESO and ongoing coordination activities between the City of Richmond and key project stakeholders, outreach activities for targeted stakeholders, and development of *BESO Support Presentations*.
- Develop an *Energy Audit Database Business Requirements and Design Specification* that captures asset, interval and lease data for residents and businesses in the City of Richmond to support implementation and compliance. Initial facility data will be collected from County Assessor and City's low-income facilities data sets.
- Define *BESO Energy Audit Database User Access Privileges*. Search functions for each key user will be defined collaboratively with Marin Clean Energy (MCE) and City of Richmond during the project.
- Develop *BESO Energy Audit Database with Guidelines* on how the system works.
- Test BESO database functionality and publish BESO database webpage.
- Contribute to City efforts to educate low-income landlords and tenants regarding the newly adopted policies through webinars, public forums, mailers, direct outreach, and City websites.
- Create a *BESO Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- BESO Proposal (draft and final)
- Implementation and Compliance Materials
- BESO Support Presentations
- Energy Audit Database Business Requirements and Design Specification
- BESO Energy Audit Database User Access Privileges
- BESO Energy Audit Database with Guidelines
- BESO Lessons Learned Document

Subtask 2.4: Develop Energy Assurance Strategy

The goal of this task is to develop a strategy, leveraging Community DERs, to ensure that critical services can be maintained in the event of an energy emergency or disruption. The goal of energy assurance is to establish an approach to manage energy resources and requirements so the community's energy assets are resilient to disasters and able to support vital community services protecting the public and minimizing economic loss.

The Recipient shall:

- Define a community stakeholder group to support a public-private partnership. Likely participants will include, but not be limited to representatives from: police and fire departments, local hospitals, schools, City facilities and fleets, and other members of the community.

Exhibit A Scope of Work

- Develop *Methodology for Assessing Threats and Vulnerabilities* that will:
 - Review existing Hazard Mitigation Plans, General Plans, Emergency Operations Plan, and Continuity of Government Plans.
 - Identify current and projected energy requirements, community characteristics and priorities in the event of a disaster.
 - Assess the community's ability to address energy needs in emergency situations using both City and community resources.
 - Assist community stakeholder group with data collection. Sources of data include:
 - Local utilities company,
 - Police and Fire departments,
 - Medical facilities,
 - Community Action groups,
 - Energy manager or sustainability coordinator,
 - Metropolitan Planning Organization,
 - Regional Council of Government (COG),
 - Public works manager,
 - Greenhouse gas reduction plan,
 - Community energy plan,
 - Climate change action plan,
 - Emergency Operating Plan,
 - General Plans,
 - Emergency Response Plans, and
 - Hazard Mitigation Plans.
- Identify and map critical services and infrastructure, key distributed assets and resources. This will include:
 - Critical services and requirements
 - City and Community assets
 - Energy supply sources (both imported by the utility and local community supply),
 - Energy use by sector (e.g., residential, commercial, industrial, institutional),
 - Back-up generation profile.
- Identify energy dependencies and interdependencies.
- Identify any agreements the City has to procure or provide energy. Evaluate any requirements or agreements in place for support of key City facilities.
- Develop a *Community Energy and Hazards Profile* identifying key assets, threats, hazards and vulnerabilities.
- Work with community stakeholder group to establish an *Energy Assurance Objectives Document*. Objectives will define what constitutes an emergency (for citizens and the grid), different types of emergencies and power priorities, and level of urgency needed to satisfy different priorities.
- Develop *Energy Assurance Strategic Action Plan* for achieving energy assurance objectives through community DER network. This will identify and prioritize actions, projects, project resources and include DER network requirements for Richmond that identifies measures to be implemented in order to achieve stated energy assurance objectives.
- Develop *Energy Assurance Strategy Support Presentations*.
- Support stakeholder outreach efforts and City Council adoption.
- Create an *Energy Assurance Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Exhibit A Scope of Work

Recipient Products

- Methodology for Assessing Threats and Vulnerabilities
- Community Energy and Hazards Profile (draft and final)
- Energy Assurance Objectives Document (draft and final)
- Energy Assurance Strategic Action Plan (draft and final)
- Energy Assurance Strategy Support Presentations (draft and final)
- Energy Assurance Lessons Learned Document

Subtask 2.5: Develop Electric Vehicle Action Plan and Procurement Framework

The goal of this task is to develop a comprehensive strategy and evaluation tool for accelerating EV fleet adoption. The EV Action Plan will assess and prioritize opportunities for scaled EV deployment to reduce levels of diesel particulate matter and integrate EV fleet planning with public health measures.

The Recipient shall:

- Establish a *Richmond EV Task Force List* to include key private and public stakeholders, potentially including, but not limited to representatives from the City fleet, public works, planning, housing, and/or community development departments.
- Produce *Richmond EV Task Force List Meeting Minutes* for each of the meetings during the project period.
- Develop an *EV Investment Planning Tool* that models alternative investment options for public agencies and other EV ecosystem stakeholders to identify costs of alternative EV investment options, including investments in EVs, infrastructure, and other local EV acceleration programs, such as Ride and Drive events.
- Develop an *EV Investment Guidance Document* that includes a highly replicable overarching methodology for pursuing EV investments. At a minimum, this would include the following:
 - EV Fleet Procurement Alternatives, including innovative approaches to vehicle and battery leasing and management, and integration of EV charging with stationary energy storage and solar PV.
 - EV Funding Guide, summarizing EV-related public and private funding opportunities at the local, regional, state, and national level.
 - Low-Emissions Freight Strategy and E-Truck Deployment Plan to address opportunities for substituting diesel and compressed natural gas-powered trucks with E-Trucks, integrating with Clean Air Plans and strategies.
 - Zero-emission School Bus Replacement Strategy developed in cooperation with partner organizations, to include technology options, financial analysis, and vehicle-grid-integration opportunities and revenue streams.
 - Vehicle-Grid-Integration Strategy identifying near-term opportunities for smart charging (V1G), vehicle-to-grid (V2G), and vehicle-to-building (V2G), including opportunities for integration of solar and stationary energy storage to mitigate demand charges, reduce energy costs, and enhance community energy resilience and security.
 - EV Charging for Multi-unit Developments, including public and private sector roles, vetted opportunities and priorities in larger multi-unit developments.
- Develop *Richmond EV Action Plan* with procurement recommendations and guidelines addressing vehicle and charging infrastructure needs, including financing, operations and maintenance requirements.

Exhibit A Scope of Work

- Create an *EV Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- Richmond EV Task Force List
- Richmond EV Task Force List Meeting Minutes
- EV Investment Planning Tool
- EV Investment Guidance Document (draft and final)
- EV Action Plan (draft and final)
- EV Lessons Learned Document

TASK 3: LOCAL PROGRAM DEVELOPMENT

The goals of this task are to 1) deploy a ZNE early adopter program that complements the City's ZNE policies, integrates with local redevelopment efforts, and benefits from a robust ZNE project pipeline; 2) develop a low-income IDSM program that aligns with the BESO's low-income tenant improvement requirements and works closely with local affordable housing landlords and workforce development programs to build the pipeline of projects and qualified local workforce to drive implementation; 3) develop a community DER program that is informed by the Energy Assurance Strategy so that it increases energy resilience and provides revenues from grid services markets; 4) deploy a GRF to provide a self-sustaining – and growing – funding source for community ZNE and IDSM projects.

Subtask 3.1: Develop Early Adopter ZNE Program

The goal of this task is to work with MCE and the City of Richmond to develop a fully-integrated ZNE program that complements the policies adopted by the City in Task 2.1, and is piloted using the projects that are planned and permitted in Task 2.2.

The Recipient shall:

- Identify local labor costs, local taxes, and other soft costs local to the Richmond community.
- Model incremental measure cost (IMC) over time for potential program measures. Using key cost inputs such as materials, design and technology, as well as local costs (labor, taxes and fees), will illustrate how different rates of cost reduction impact the IMC, and thus the likely program participation under different scenarios.
- Correlate MCE's available incentive budget with IMCs under different cost reduction scenarios to establish incentive levels for program measures. Incentives will apply the Market Transformation Theory of higher incentives early on⁸, reducing over time as technology costs decline and low-cost design alternatives replace costly technologies.
- Develop *ZNE Program Measure List*, including eligible technologies and current incentive levels.
 - Analyze annual and lifecycle savings for potential program measures.
 - Research technology cost trends for potential program measures. This will include both literature reviews and interviews with developers, contractors, builders, manufacturers, distributors and other market actors.

⁸ This is the model used in the California Solar Initiative—one of the most widely regarded clean energy market transformation programs in the world.

Exhibit A Scope of Work

- Develop *ZNE Program Policy Manual*. At a minimum, this will specify the:
 - Eligibility requirements.
 - Program process flow from program marketing through measurement and verification. It will provide detailed descriptions of how the different programs from MCE and other local program administrators work together to eliminate barriers to participation.
 - Incentive design, including how and when the incentives can be modified per the market transformation program theory.
 - Key points of contact with the City of Richmond and MCE.
 - Measurement and verification plan that satisfies City, MCE, California Public Utilities Commission (CPUC) and California Independent Systems Operator requirements.
- Create a *ZNE Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- ZNE Program Measure List (draft and final)
- ZNE Program Policy Manual (draft and final)
- ZNE Lessons Learned Document

Subtask 3.2: Develop Low-Income Program

The goal of this task is to work with MCE and the City of Richmond to design a low-income energy efficiency program that complements the BESO adopted by the City in Task 2.3.

The Recipient shall:

- Develop *Low-Income Program Measure List* based on IMC and measure savings that will include but not be limited to the following:
 - Review work papers in the Database for Energy Efficiency Resources (DEER) to determine claimable savings from program measures.
 - Model IMC over time for potential program measures.
 - Develop specifications for energy management technology that satisfies the requirements of AB 793 and enables automated participation in DR. 6
- Develop *Low-Income Program Policy Manual*. At a minimum, this will specify the:
 - Eligibility requirements.
 - Program process flow from program marketing through measurement and verification. It will provide detailed descriptions of how the different programs from MCE and other local program administrators work together to eliminate barriers to participation.
 - Measure table with incentive levels.
 - Key points of contact with the City of Richmond and MCE.
 - Strategies for using the BESO data system to target program outreach.
- Create a *Low-Income Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- Low-Income Program Measure List (draft and final)
- Low-Income Program Policy Manual (draft and final)
- Low-Income Lessons Learned Document

Exhibit A Scope of Work

Subtask 3.3: Establish Green Revolving Fund

The goal of this task is to establish a GRF that provides a self-sustaining funding source for ongoing investments in IDSM and ZNE projects throughout the community. Energy savings and DER revenues will replenish GRF so that it can continuously reinvest in community projects that are cost-effective and advance local and state energy goals.

The Recipient shall:

- Draft a *GRF Guiding Document* to outline the operational procedures for the fund including the process for reviewing project proposals, making investments, and tracking savings. Assist in signing onto the Billion Dollar Green Challenge, a network of non-profit institutions committed to GRFs.
- Draft and disseminate a *Press Release* on the Richmond GRF, showcasing progress made from beginning of first project to the first funding from the GRF.
- Provide GRF Administrator access to the *Green Revolving Investment Tracking System 1.2 (GRITS)*, a web tool designed to help institutions better manage and analyze project-level energy, financial and carbon savings data. GRITS facilitates GRF management, allowing the user to instantly see the payback period and return on investment from individual projects or from the entire fund's portfolio.
- Assist in securing seed money for the GRF from various sources.
- Determine the goals and accounting structures of the fund.
- Design the operational activities of the fund's steering committee.
- Train staff administrators in using the GRITS tool for their GRF, both in-person and over the phone
- Implement GRITS software upgrades to assist Richmond with utility rate escalators, customization of carbon emissions factors, and an API with Energy Star's Portfolio Manager.
- Develop a *Public-facing Page for the Richmond AEC GRF within GRITS* that will display charts and graphs of GRF savings data to the public.
- Create a *GRF Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- GRF Guiding Document
- Press Release
- Green Revolving Investment Tracking System 1.2
- Public-facing Page for Richmond AEC GRF within GRITS
- GRF Lessons Learned Document

Subtask 3.4 Develop Community DER Program

The goal of this task is to work with MCE and the City of Richmond to design a DER program that complements the policies adopted by the City and supports the recommendations from the Energy Assurance Strategy and Richmond EV Action Plan.

The Recipient shall:

- Develop a *Challenges and Opportunities Report* to analyze community energy assets capabilities to provide grid services both within the community and to the distribution and transmission grids.

Exhibit A Scope of Work

- Define a sustainable Community DER Program to integrate and aggregate distributed assets throughout the community to provide grid services and energy supply, optimizing efficiencies, reliability and energy assurance objectives.
- Develop an *Enrollment and Participation Manual* that will streamline the enrollment of a variety of technologies. Processes and procedures for participation will be documented for a smooth integration into the program. .
- Develop a *DER Program Implementation Plan* documenting DER program requirements, grid services opportunities, outreach and enrollment strategies, timeline, management and administrative roles, and operational and business processes for DER Program.
- Create a *DER Lessons Learned Document* on the process from this effort for use in development of the Case Study (Task 4).

Recipient Products

- Challenges and Opportunities Report (draft and final)
- Enrollment and Participation Manual
- DER Program Implementation Plan (draft and final)
- DER Lessons Learned Document

TASK 4: CASE STUDY

The goal of this task is to ensure that the outcomes and learning derived from the Richmond AEC Project are made available and utilized by other potential Advanced Energy Communities. The Recipient will assemble the Project Case Study along with the models, plans, strategies and templates developed under this project into a comprehensive ZNE Community Toolkit. The Toolkit will be accessible as an online web resource and used as the basis for three planned workshops informing audiences of the steps needed to achieve similar results in other communities. The Recipient will also build on strong ZNE early adopter and local government professional networks to support promotion of the workshops and establish channels for supplemental dissemination of the Toolkit.

The Recipient shall:

- Develop a *Richmond AEC Case Study* summarizing the processes, challenges and lessons learned during this project..
- Produce *Master Community Design Report and Graphics*. This report will serve as a shared implementation plan for the City. Key attachments will include, but are not limited to:
 - Summary of abandoned homes in Richmond,
 - Designs for first tranche of abandoned home renovations,
 - Case study,
 - Adopted policy language,
 - Planning documents,
 - Program designs and implementation plans,
 - Educational materials,
 - Energy and water efficiency measures, and
 - Key data and methodologies.
- Assemble a ZNE Community Toolkit including the Project Case Study, Tools and Recommendations, and AEC Financial Models.

Exhibit A Scope of Work

- Create *Promotional Materials* inviting the target audiences to attend workshops in Northern and Southern California to learn about the Richmond AEC project.
 - Secure facilities and plan logistics for at least three workshops to present project tools and models. When possible, the Recipient would hold these workshops in conjunction with ongoing conferences/meetings of the target audiences to maximize travel expense and minimize time away.
- Facilitate development of the *Workshop Agenda*, scheduling speakers and speaker preparation.
- Publicize workshops with direct email campaigns, website postings and printed media through key channels, including:
 - Local Governments: League of Cities, Local Government Commission, councils of governments, air quality management districts, regional energy networks, Urban Land Institute, US Green Building Council, American Institute of Architects chapters, utility local government partnership representatives, New Buildings Institute, school networks, etc.;
 - Home Builders: California Homebuilders Foundation, California Building Industry Association, Net Zero Energy Coalition, KB Home, New Buildings Institute; and
 - Solar, Storage and EV Industry Groups: Solar Energy Industry Association, Solar Electric Power Association, Solar Alliance, California Energy Storage Alliance, California Plug-in Electric Vehicle Collaborative, regional EV councils, Clean Cities Coalition, congestion management agencies, National Association of Fleet Managers, California County Fleet Managers Association, Municipal Fleet Managers Association.
- Facilitate three workshops to present the *ZNE Community Toolkit*.
- Create *Workshop Presentations* that will highlight the following topics:
 - Establishing ZNE Reach Codes,
 - BESO best practices,
 - Energy assurance planning,
 - Procuring EVs communitywide,
 - Establishing a GRF,
 - Using SIBs to combat neighborhood blight and advance ZNE community development,
 - Integrating local policy adoption as a voluntary program strategy,
 - Encouraging ZNE and AEC development through permit streamlining.
- Extend dissemination of materials through key channels following the workshops, including on ZNE Alliance and trade group networks.
- Pursue placement of articles about the Richmond AEC project in relevant local and trade media.
- Develop and maintain a project database and provide *Project Database Access* to CAM. Throughout the project the team will be collecting data on all key AEC project areas. The team will store all data in a secure database. At a minimum, the database will include, but not be limited to information on the following:
 - Zoning ordinance.
 - Low-income facilities – Location within community, lease terms, existing equipment, etc.
 - Abandoned homes – Type of renovation planned (appliance repair, remodel, complete demolition and rebuild, etc.), and building type (existing and planned)
 - Critical power needs – Where and how much is it needed within the community? Where and how much currently exists within the community?

Exhibit A Scope of Work

- DERs (includes emergency power) – Type (emergency backup generation, solar, DR, storage, energy efficiency, etc.), location, existing, planned, and focus areas.
- EVs – EV infrastructure needs (major transit and freight corridors, anchor locations warranting increased levels of EVSE, multi-unit dwellings, etc.), fleet data for major public and private fleets.

Recipient Products:

- Promotional Materials (draft and final)
- Workshop Agenda
- Workshop Presentations
- Richmond AEC Case Study (draft and final)
- Master Community Design Report and Graphics (draft and final)
- ZNE Community Toolkit
- Project Database Access

TASK 5: 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.

Exhibit A Scope of Work

- Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
- Investment dollars/follow-on private funding as a result of Energy Commission funding.
- Patent numbers and applications, along with dates and brief descriptions.
- Additional Information for Product Demonstrations:
 - Outcome of demonstrations and status of technology.
 - Number of similar installations.
 - Jobs created/retained as a result of the Agreement.
- For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.
 - An estimate of how the project information has affected energy use and cost, or has resulted in other non-energy benefits.
 - An estimate of energy and non-energy benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
 - 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.

Recipient Products:

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

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

Exhibit A Scope of Work

- 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.

Recipient 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: ZERO NET ENERGY ALLIANCE

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

RESOLVED, that the Energy Commission approves Agreement EPC-15-076 from GFO-15-312 with Zero Net Energy Alliance for a \$1,480,111 grant to facilitate adoption of a comprehensive integrated policy, planning, and financing framework to transform the City of Richmond into a ZNE Community. As part of the project, ZNE Alliance will also facilitate the planning and permitting of approximately 20 abandoned homes to be converted into affordable ZNE homes; 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 May 17, 2016.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat