



GRANT REQUEST FORM (GRF)

A) New Agreement # PIR-20-008

B) Division	Agreement Manager:	MS-	Phone
ERDD	Reta Ortiz	43	916-776-0801

C) Recipient's Legal Name	Federal ID Number
THE RAND CORPORATION	95-1958142

D) Title of Project
Strategic Pathways and Analytics for Tactical Decommissioning of Portions of Natural Gas Infrastructure in Southern California

E) Term and Amount

Start Date	End Date	Amount
6/30/2021	9/30/2023	\$ 964,721

F) Business Meeting Information

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

Proposed Business Meeting Date 6/9/2021 Consent Discussion

Business Meeting Presenter Reta Ortiz Time Needed: 5 minutes

Please select one list serve. NaturalGas (NG Research Program

Agenda Item Subject and Description:

THE RAND CORPORATION. Proposed resolution approving Agreement PIR-20-008 with The RAND Corporation for a \$964,721 grant to fund research to develop an analytical framework to identify locations in Southern California where decommissioning can occur in an equitable, and cost-effective way, and adopting staff's determination that this action is exempt from CEQA. Using detailed models of the gas system with data on the socioeconomic conditions of candidate communities, the team will evaluate different decommissioning sites and approaches in the Southern California Gas Company service territory. (Staff presentation: 5 minutes) (PIER NG funding) Contact: Reta Ortiz.

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":

Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because This project focus will be to develop an analysis framework to identify candidate pilot sites for future decommissioning of natural gas infrastructure. This will be primarily a paper study.

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:



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

Explain reason why Agreement is exempt under the above section:

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

Check all that apply

Initial Study

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
Institute of Gas Technology dba Gas Technology Institute	\$ 99,275
Los Angeles Regional Collaborative	\$ 19,999

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

Legal Company Name:

J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
NG Subaccount, PIERDD	19-20	501.001N	\$964,721

R&D Program Area: ESRO: ETSI

TOTAL: \$ 964,721

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Kelly Klima

Address: 1776 Main Street

PO Box 2138

City, State, Zip: Santa Monica, CA
90401-3208

Phone: 310.393.0411 x6062

E-Mail: kklima@rand.org

2. Recipient's Project Manager

Name: Kelly Klima

Address: 1776 Main Street

PO Box 2138

City, State, Zip: Santa Monica, CA
90401-3208

Phone: 310.393.0411 x6062

E-Mail: kklima@rand.org



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

L) Selection Process Used

Competitive Solicitation Solicitation #: GFO-20-503

First Come First Served Solicitation Solicitation #:

Non-Competitive Bid Follow-on Funding (SB 115)

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 checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

EXHIBIT A

Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Community Research and Engagement
3	X	Economic Modeling (Decommissioning)
4		Equity Modeling (Community and Utility)
5	X	Evaluation (Decision Analysis)
6		Pilot Project Work Plans
7		Guidelines
8		Evaluation of Project Benefits
9		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CA	California
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CPR	Critical Project Review
GHG	greenhouse gas
SoCalGas	Southern California Gas Company
TAC	Technical Advisory Committee

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

A. Purpose of Agreement

The purpose of this Agreement is to fund research to develop multi-disciplinary and objective analytical framework for decision makers to decommission portions of natural gas infrastructure in Southern California in an equitable and cost-effective way.

B. Problem/ Solution Statement

Problem

California (CA) has some of the most aggressive policies in the U.S. for reducing emissions associated with natural gas use. It is likely that in most places decommissioning natural gas and switching customers to electricity will be the most cost-effective approach to meeting these goals. However, this transition will be difficult in many places for a myriad of reasons. How the gas system is decommissioned over time will have large impacts on customers and the gas and

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

electricity-serving utilities alike. It is important to ensure socioeconomic equity issues are considered in decommissioning efforts. This decision analysis problem becomes even more complex in places where gas and electric utilities are predominantly separate, such as Southern California.

Solution

The recipient will develop a community-level, stakeholder-informed, multi-disciplinary and objective analytical framework to identify locations in Southern California where decommissioning can occur in a just, equitable, and cost-effective way. The recipient will bring together detailed models of the gas system with data on the socioeconomic conditions of candidate communities to evaluate different decommissioning sites and approaches, and work directly with stakeholders in Southern California communities in Los Angeles County (Cities of Long Beach and Santa Monica) in a series of workshops to understand the key needs and concerns of the natural gas customers and then evaluate the different decommissioning alternatives along cost, viability, and equity lines. The recipient will provide specific recommendations for three sites for future decommissioning pilots, and a set of guidelines and criteria to inform site identification and selection for decommissioning of natural gas infrastructure in other areas.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this project will be to develop an objective and stakeholder-informed framework to identify where natural gas decommissioning will (1) serve the interests of affected communities, (2) lead to net economic and societal benefits, and (3) be plausible under a wide range of possible future conditions.

Ratepayer Benefits: This Agreement will result in ratepayer benefits of lower costs (e.g., lower cost per unit of energy, lower greenhouse gas emissions) and or increased safety by estimating and comparing the outcomes of different decommissioning strategies under a wide range of plausible futures, thus supporting selection of decommissioning strategies that will ensure ratepayer benefits in an uncertain future.

Technological Advancement and Breakthroughs: 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 creating a framework and associated criteria for decommissioning site identification and selection that considers the case of single fuel utilities. The recipient will work with the stakeholders to draft at least three pilot applications for decommissioning natural gas infrastructure.

Agreement Objectives

The objectives of this Agreement are to:

- Develop a framework with a set of criteria for identifying and selecting promising decommissioning sites
- Identify and understand stakeholder (community & utility) decision criteria and model equity concerns
- Assess economic implications of decommissioning by building a macro-economic model to determine effects on rate payers and building a hydraulic model to determine local effects of decommissioning

EXHIBIT A Scope of Work

- Conduct decision analysis under deep uncertainty to inform robust planning for targeted decommissioning
- Draft at least three pilot applications for decommissioning natural gas infrastructure.

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V)**. All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations. All technical tasks should include product(s). Products that require a draft version are indicated by marking “**(draft and final)**” after the product name in the “Products” section of the task/subtask. If “(draft and final)” does not appear after the product name, only a final version of the product is required. With respect to due dates within this Scope of Work, “**days**” means working days.

The Recipient shall:

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

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

For products that require a final version only

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

For all products

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

- **Electronic File Format**

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

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

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

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

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 CEC 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;
- Invoicing and auditing procedures;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);
- Permit documentation (subtask 1.8);

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- 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 (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
 - Any other relevant topics.
- Provide *Kick-off Meeting Presentation* to include but not limited to:
 - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
 - Project schedule that identifies milestones
 - List of potential risk factors and hurdles, and mitigation strategy
 - Provide an *Updated Project Schedule, Match Funds Status Letter, and Permit Status Letter*, as needed to reflect any changes in the documents.

The CAM shall:

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

Recipient Products:

- Kick-off Meeting Presentation
- Updated Project Schedule (*if applicable*)
- Match Funds Status Letter (subtask 1.7) (*if applicable*)
- Permit Status Letter (subtask 1.8) (*if applicable*)

CAM Product:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

The goal of this subtask is to determine if the project should continue to receive CEC funding, and if so whether any modifications must be made to the tasks, products, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the CEC 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 CEC.

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 CEC, but they may take place at another location, or may be conducted via electronic conferencing (e.g., WebEx) as determined by the CAM.

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The Recipient shall:

- Prepare and submit 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.
- 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* with 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)

CAM Products:

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

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

- The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
- The administrative portion of the meeting will involve a discussion with the CAM and the CAO of the following Agreement closeout items:
 - Disposition of any procured equipment.
 - The CEC's request for specific "generated" data (not already provided in Agreement products).
 - Need to document the Recipient's disclosure of "subject inventions" developed under the Agreement.

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- “Surviving” Agreement provisions such as repayment provisions and confidential products.
- Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Recipient and Commission staff during the meeting.
- Prepare a *Schedule for Completing Agreement Closeout Activities*.
- Provide copies of *All Final Products* on a USB memory stick, organized by the tasks in the Agreement.

Products:

- Final Meeting Agreement Summary (*if applicable*)
- Schedule for Completing Agreement Closeout Activities
- All Final 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 Funds 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. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC 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 *Energy Commission Style Manual* provided by the CAM.

Recipient Products:

- Final Report Outline (draft and final)

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CAM Product:

- Energy Commission 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, Energy Commission Style Manual, and Final Report Template provided by the CAM with the following considerations:
 - Ensure that the report includes the following items, in the following order:
 - Cover page (**required**)
 - Credits page on the reverse side of cover with legal disclaimer (**required**)
 - Acknowledgements page (optional)
 - Preface (**required**)
 - Abstract, keywords, and citation page (**required**)
 - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
 - Executive summary (**required**)
 - Body of the report (**required**)
 - References (if applicable)
 - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
 - Bibliography (if applicable)
 - Appendices (if applicable) (Create a separate volume if very large.)
 - Attachments (if applicable)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* received on the Executive Summary. For each comment received, the recipient will identify in the summary the following:
 - Comments the recipient proposes to incorporate.
 - Comments the recipient does propose to incorporate and an explanation for why.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the Final Report. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised Final Report electronically with any Written Responses to Comments within 10 days of receipt of CAM's Written Comments on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

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

CAM Product:

- Written Comments on the Draft Final Report

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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 CEC 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 CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state this in the letter.

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

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

Products:

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

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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.

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 each executed subcontract.

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

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

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

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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.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

EXHIBIT A Scope of Work

Products:

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

Subtask 1.12 Project Performance Metrics

The goal of this subtask is to identify key performance targets for the project. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the draft *Project Performance Metrics Questionnaire* to the CAM prior to the Kick-off Meeting.
- Present the draft *Project Performance Metrics Questionnaire* at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
 - TAC comments the recipient proposes to incorporate into the final *Project Performance Metrics Questionnaire*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit a final *Project Performance Metrics Questionnaire* with incorporated TAC feedback.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the recipient met each of the performance metrics in the final *Project Performance Metrics Questionnaire*.
- Discuss the final *Project Performance Metrics Questionnaire* and *Project Performance Metrics Results* at the Final Meeting.

Products:

- Project Performance Metrics Questionnaire (draft and final)
- TAC Performance Metrics Summary
- Project Performance Metrics Results

EXHIBIT A

Scope of Work

IV. TECHNICAL TASKS

TASK 2: COMMUNITY RESEARCH AND ENGAGEMENT

The goals of this task are to work with stakeholders from Long Beach, CA and Santa Monica, CA in co-production of knowledge to (1) develop relevant criteria for identifying and selecting decommissioning sites, (2) seek stakeholder input about decommissioning natural gas infrastructure, (3) review key tradeoffs of different sites, and (4) select pilot decommissioning sites.

The Recipient shall:

- Review the natural gas and electricity systems for the communities within Long Beach, CA and Santa Monica, CA
- Conduct initial analysis and preparation for a workshop with each of the cities.
- Meet with the TAC (via in-person with a teleconference option) to supplement other data collection methods.
- Facilitate a half-day workshop with each community to determine additional decision analysis criteria that may be needed to determine at least three pilot siting locations.
- Facilitate a half-day in each of the communities to seek input on at least three potential pilot decommission sites.
- Identify at least three potential pilot decommission sites. At least one of these will be located within a disadvantaged community (defined as a community in the top 25% scoring areas from CalEnviroScreen along with other areas with high amounts of pollution and low populations). At least one of which will be located in a low-income community (defined as a community within census tracts with median household incomes at or below 80 percent of the statewide median income or the applicable low-income threshold listed in the state income limits updated by the Department of Housing and Community Development).

Subtask 2.1: Background Review of Community System and Demographics

The goal of this subtask is to conduct initial analysis and preparation for a workshop with each partner city.

The Recipient shall:

- Map each cities' gas and electricity system as a function of both publicly available (e.g., DHS HIFLD) and, where possible sensitive (i.e., not publicly available data) level.
- Collect data (e.g., census data, CalAdapt data, FEMA's National Risk Index data) to characterize known community level data that would be available to any California community.
- Define a set of typical buildings to be considered in decommissioning for each city.
- Work with the cities and utilities to identify unique local characteristics (e.g., geography, policies, land use, etc.) that might affect decommissioning choices.
- Prepare a *Community Characteristics and Energy Infrastructure Memorandum* that includes:
 - A description of what data are critical to the decision-making process;
 - A description of each community and patterns of demographic and socio-economic characteristics;
 - A map of each community's natural gas and electricity infrastructure;
 - A list of 5-10 unique local characteristics that might affect the decision to decommission;

EXHIBIT A

Scope of Work

- A set of building types for the local community; and,
- How can the data be obtained, used, and maintained in ways that account for certain datasets being sensitive or confidential.

Products:

- Community Characteristics and Energy Infrastructure Memorandum

Subtask 2.2: Scoping Workshop to Elicit Metrics and Uncertainties

The goal of this subtask is to hold a workshop in each of the communities to determine additional decision analysis criteria that may be needed to determine pilot siting locations.

The Recipient shall:

- Work with the communities to identify a set of stakeholders that should be present at the scoping workshop.
- Create the subject matter expert elicitation methods to be used to elicit decision analysis criteria of interest to the stakeholders.
- Facilitate the workshop, and all related administration.
- Elicit additional decision analysis criteria that may be needed to determine pilot siting locations across economic, technical, and customer criteria.
- Survey pre- and -post workshop public perceptions information on customer acceptance data that will be used to develop strategies to gain agreement from customers to decommission natural gas infrastructure (e.g., convert to all-electric service).
- Revise the *Community Characteristics and Energy Infrastructure Memorandum* developed in Subtask 2.1 based on the workshop discussions.
- Prepare a *Public Perception Memorandum* that includes a summary of key input (such as public support) related to gas decommissioning raised by community and utility stakeholders.

Products:

- Community Characteristics and Energy Infrastructure Memorandum, (revised)
- Public Perception Memorandum

Subtask 2.3: Deliberations Workshop (compare alternatives)

The goal of this subtask is to hold a workshop in each of the communities to deliberate on potential pilot decommissioning sites.

The Recipient shall:

- Work with the communities to determine whether additional stakeholders should be present at the deliberations workshop.
- Create the deliberations methods to be used to guide the stakeholders through a discussion of the pilot decommission sites.
- Run the workshop, and all related administration.
- Elicit additional information that may be needed to determine pilot siting locations; and
- Survey pre- and -post workshop public perceptions information on customer acceptance data that will be used to inform the guidelines and communication techniques.
- Prepare a *Results of Deliberations Workshop Memorandum*.

EXHIBIT A Scope of Work

Products:

- Results of Deliberations Workshop Memorandum.

TASK 3: ECONOMIC MODELLING (DECOMMISSIONING)

The goal of this task is to identify a slate of options for decommissioning at least three sites and conduct a cost analysis for each, subject to the parameters likely to be considered by the communities of interest.

The Recipient shall:

- Outreach to the TAC to supplement research as needed.
- Evaluate the operational consequences of altering gas flow on select pipelines of a local distribution network.
- Evaluate the various decommissioning costs associated with isolating parts of an integrated gas delivery network and developing various decommissioning strategies.
- Configure existing model(s) to model the impact of certain decommissioning actions on natural gas rate payers.
- Identify and evaluate replacements for natural gas infrastructure that has been decommissioned.
- Participate in a CPR Meeting.

Subtask 3.1: Configure Hydraulic Models for Communities

The goal of this subtask is to evaluate the operational consequences of altering gas flow on select pipelines of a local distribution network.

The Recipient shall:

- Configure a high-res model to help understand the consequences of altering gas flow to select portions of the network.
- Develop, configure, and/or utilize a gas hydraulic model of sufficient resolution fidelity to provide useful information on the cost of decommissioning selected lines and their contribution to the cost evaluation of electrification.
- Develop Geo-coded database populated with impacts of decommissioning of lines.
- Develop a robust decision support framework that includes evaluation of altering gas flow on local distribution network, decommissioning costs of selected lines and equity modeling.
- Evaluate operational complexities using gas hydraulic model.
- Prepare a *Cost Evaluation of Decommissioning Strategies Memorandum* that will include:
 - Information on total costs associated with decommissioning gas infrastructure; and
 - Classification of investment characteristics to help inform potential electrification candidates.

Products:

- Cost Evaluation of Decommissioning Strategies Memorandum

Subtask 3.2: Evaluate Costs of Different Decommissioning Strategies

The goal of this subtask is to evaluate the various decommissioning costs associated with isolating parts of an integrated gas delivery network and developing various decommissioning strategies.

EXHIBIT A

Scope of Work

The Recipient shall:

- Analyze the necessary information such as cost to interrupt existing gas networks, amount of gas no longer consumed, number and types of buildings that no longer receive the gas, age and code of construction of homes and buildings impacted by no gas supply, cost estimates of bring them up to the current code, and any additional costs to neighboring areas to analyze the total costs associated with decommissioning gas infrastructure.
- Develop a Geo-coded database that will summarize the true costs associated with decommissioning of gas infrastructure and categorize the investment opportunities to help classify lines for potential electrification candidates.
- Generate various decommissioning strategies in order to evaluate the best potential electrification candidates.
- Revise *Cost Evaluation of Decommissioning Strategies Memorandum* developed in Subtask 3.1 based on evaluations conducted.

Products:

- Cost Evaluation of Decommissioning Strategies Memorandum, (revised)

Subtask 3.3: Adapt Macro Model / Model Rate Payer Impacts

The goal of this subtask is to evaluate the decommissioning costs to the broader rate payers associated with isolating parts of an integrated gas delivery network and developing various decommissioning strategies.

The Recipient shall:

- Identify an existing utility model for natural gas rate payers.
- Aggregate and anonymize the model such that it can be used to model the impact of certain decommissioning actions on natural gas rate payers.
- Model within the communities of interest the effects of certain levels of decommissioning on rate-payers.
- Prepare a *Rate Payer Impacts Memorandum* that will describe the impact of certain decommissioning actions on natural gas rate payers.

Products:

- Rate Payer Impacts Memorandum

Subtask 3.4: Evaluate Costs of Alternatives to Conventional Natural Gas

The goal of this subtask is to identify and evaluate replacements for natural gas infrastructure that has been decommissioned.

The Recipient shall:

- Identify options that could replace the gas infrastructure (e.g., electrification, energy efficiency measures such as improved insulation, passive heating and cooling techniques).
- Identify options to retain natural gas infrastructure and meet California's greenhouse gas reduction goals (e.g., decarbonizing the fuel stock, energy efficiency incentives, etc.).
- Define for each building (type given in Task 2) the costs of implementing these alternatives (where costs are defined as the decision criteria identified in Task 2).
- Perform short-term and long-term cost/benefit analysis for customers and utilities, including costs over time and GHG reduction analysis and air quality improvement.

EXHIBIT A

Scope of Work

- Aggregate option costs to pilot decommissioning level.
- Prepare a *Alternatives to Conventional Natural Gas Cost Evaluation Memorandum* which will include the short-term and long-term cost/benefit analysis performed as well as a summary of options that could replace the gas infrastructure and options to retain natural gas infrastructure and meet California's greenhouse gas reduction goals.
- Participate in a CPR Meeting and prepare a *CPR Report #1* as described in subtask 1.3.

Products:

- Alternatives to Conventional Natural Gas Cost Evaluation Memorandum
- CPR Report #1 (delivered as a PowerPoint briefing)

TASK 4: EQUITY MODELING (COMMUNITY & UTILITY)

The goal of this task is to evaluate what will be needed to achieve customer and utility acceptance.

The Recipient shall:

- Conduct a literature review on equity for decommissioning natural gas infrastructure.
- Outreach to the TAC (via email, phone, or another remote option) to supplement research as needed.
- Relate Task 2 decision criteria to equity considerations for communities.
- Work with utilities to determine their equities related to decommissioning natural gas.
- Construct five or more paragraph long vignettes on equity considerations for decommissioning natural gas infrastructure.
- Adapt the CEC/CPUC Disadvantaged Communities Advisory Group's Equity Framework and Energy Equity Indicators for natural gas decommissioning.
- Determine metrics for equity considerations.
- Use weighting from Task 2 to inform ranking of equity metrics.
- Calculate the equity metrics for each of the options identified in Task 3.

Subtask 4.1: Develop Equity Model

The goal of this subtask is to adapt the CEC/CPUC Disadvantaged Communities Advisory Group's Equity Framework and Energy Equity Indicators for natural gas decommissioning.

The Recipient shall:

- Conduct a literature review on equity for decommissioning natural gas infrastructure.
- Relate Task 2 decision criteria to equity considerations for communities.
- Work with utilities to determine their equities related to decommissioning natural gas.
- Construct five or more paragraph long vignettes on equity considerations for decommissioning natural gas infrastructure.
- Adapt the CEC/CPUC Disadvantaged Communities Advisory Group's Equity Framework and Energy Equity Indicators for natural gas decommissioning.
- Prepare an *Equity Framework and Energy Equity Indicators Memorandum* that will include:
 - the results of the literature review;
 - the relationship between the decision criteria and equity considerations;
 - the five or more vignettes; and
 - policy implications for suggested adaptations to the Equity Framework and Energy Equity Indicators for natural gas decommissioning.

EXHIBIT A

Scope of Work

Products:

- Equity Framework and Energy Equity Indicators Memorandum

Subtask 4.2: Evaluate Equity Aspects of Strategies

The goal of this subtask is to quantify the equity aspects.

The Recipient shall:

- Determine metrics for equity considerations.
- Use weighting from Task 2 to inform ranking of equity metrics.
- Calculate the equity metrics for each of the options identified in Task 3.
- Revise *Equity Framework and Energy Equity Indicators Memorandum*

Products:

- Equity Framework and Energy Equity Indicators Memorandum, (revised)

TASK 5: EVALUATION (DECISION ANALYSIS)

The goal of this task is to use models and stakeholder engagements to determine how to site the pilot locations.

The Recipient shall:

- Develop plausible futures
- Identify alternative pilot sites to evaluate
- Meet with the TAC (via in- with a teleconference option) to supplement other data collection methods.
- Model the economics and equity aspects of alternative pilot sites
- Prepare interactive visualizations to support tradeoff analysis
- Participate in CPR Meeting and prepare CPR Report #2

Subtask 5.1: Develop Plausible Futures

The goal of this subtask is to develop a set of futures reflecting uncertain conditions that could affect the merits of different sites.

The Recipient shall:

- Review the key assumptions from the economic and equity modeling (Tasks 3 and 4) and identify those that are uncertain.
- Collect best available data to estimate plausible ranges for uncertainties.
- Develop a set of futures by sampling across the plausible ranges for the uncertainties.
- Prepare a *Natural Gas Decommissioning Futures Report* that includes:
 - A list of key inputs from Tasks 2-4, such as data inputs and models to help evaluate technology feasibility, cost and benefit analysis, ratepayer's impact, customer acceptance, and equity.
 - A list of key modeling assumptions and plausible ranges;
 - A description of the sampling technique used to develop a set of futures; and
 - Graphics illustrating the futures.

Products:

- Natural Gas Decommissioning Futures Report (Draft and Final)

EXHIBIT A

Scope of Work

Subtask 5.2: Identify Alternative Pilot Sites to Evaluate

The goal of this subtask is to develop at least 5 alternative pilot sites for the two communities for evaluation through consultation with gas and electric utility partners.

The Recipient shall:

- Work with the gas and electric utilities, along with information from the *Community Characteristics and Energy Infrastructure Memorandum* (Task 2) to define alternative pilot sites and options for decarbonizing gas use in each site.
- Prepare a *Potential Decommissioning Pilot Sites Memorandum* that includes for Long Beach and Santa Monica, CA:
 - A description of the modeling performed to select the alternative pilot sites; and
 - Descriptions of each alternative site and key economic and equity modeling results.
- Conduct TAC Meeting #2 as described in subtask 1.11.

Products:

- Potential Decommissioning Pilot Sites Memorandum

Subtask 5.3: Model the Economics and Equity Aspects of Alternative Pilot Sites

The goal of this subtask is to evaluate the economic and equity aspects of the alternative pilot sites.

The Recipient shall:

- Use the cost and equity models developed in Tasks 3 and 4 to assess the alternative pilot sites per the decision criteria developed through the stakeholder engagements in Task 2 for each uncertain future. Analytical results will include, but are not limited to:
 - Capital cost for decommissioning gas lines;
 - Costs of electrification for various options;
 - Change in utility maintenance costs;
 - Change in annual energy costs for affected energy users;
 - Summaries of socioeconomic characteristics of decommissioned sites;
 - Satisfaction scores;
 - Reliability;
 - And others proposed in the workshops.
- Prepare *Evaluation of Alternative Gas Decommissioning Sites Memorandum* that describes the analysis performed and summarizes key findings.

Products:

- Evaluation of Alternative Gas Decommissioning Sites Memorandum

Subtask 5.4: Prepare Interactive Visualizations to Support Tradeoff Analysis

The goal of this subtask is to develop a decision support tools to support tradeoff analysis of tradeoffs with stakeholders during the second set workshops (subtask 2.3).

The Recipient shall:

- Develop a set of interactive visualizations using Tableau Software that presents the results of the model evaluations of the alternative pilot projects, including:
 - Interactive maps showing the gas infrastructure that is decommissioned and affected buildings for each alternative site;

EXHIBIT A

Scope of Work

- Interactive tables showing performance of alternative projects and economic and equity outcomes;
- Sensitivity of outcomes across futures; and
- Multi-attribute parallel axis plots to identify dominant alternatives across user-selected criteria of importance.
- Construct simple website to host the interactive visualizations for sharing with the CEC and workshop participants for subtask 2.3.
- Prepare an *Interactive Visualizations Memorandum* describing the interactive visualizations and how to use them, and a link to access them through a web browser
-
- Participate in CPR Meeting and prepare a *CPR Report #2* as described in subtask 1.3.

Products:

- Interactive Visualizations Memorandum
- CPR Report #2, (delivered as a PowerPoint briefing)

TASK 6: PILOT PROJECT WORK PLANS

The goal of this task is to develop three pilot work plans with the communities where the approaches can be implemented and verified in the near-term or within five years.

The Recipient shall:

- Review each site for potential environmental issues.
- Facilitate remote interactions with relevant community stakeholders to write the pilot project work plans.
- Meet with CEC to receive guidance on additions to the work plans.
- Establish a timeline to make key planning decisions, identify potential risks, and provide a sound mitigation plan for those risks.
- Prepare *Pilot Project Work Plans* for each proposed pilot site to include:
 - Description of project costs, benefits, feasibility, potential environmental issues, options, estimated workforce needed, equity considerations, and steps required for the decommissioning and electrification transition, including, but not limited to, upstream shutoffs, pipeline removal, electrical infrastructure upgrades.
 - Established timeline to make key planning decisions, identify potential risks, and provide a sound mitigation plan for those risks.
- Provide Draft Pilot Project Work Plans to TAC and request feedback.

Products:

- Pilot Project Work Plans (Draft and Final)

TASK 7: GUIDELINES

The goal of this task is to create a set of guidelines and criteria that enable decision makers to identify potential project sites for natural gas system decommissioning, quantify the avoided natural gas infrastructure costs associated with all-electric service, assess costs and benefits of electric system upgrades and building electrification, and evaluate expected cost increases or savings and customer acceptance.

The Recipient shall:

EXHIBIT A

Scope of Work

- Create a method for decision makers to identify and weight importance of criteria
- Provide lessons learned and recommendations for further development and application of the decision-making framework for evaluating sites for decommissioning and electrification on a statewide scale.
- Write a set of *Decommissioning Guidelines* that enable decision makers to use publicly available data and models to identify potential project sites for natural gas system decommissioning.
 - Describe how proprietary data or modelling might supplement these guidelines.
- Work with a volunteer from the TAC to conduct appropriate quality assurance reviews on the guidelines and final report.

Products:

- Decommissioning Guidelines (Draft and Final)

TASK 8 EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

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

EXHIBIT A Scope of Work

- 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 CEC 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 9 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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

The Recipient Shall:

- Develop and submit a *Knowledge Transfer Plan* that identifies the proposed activities the recipient will conduct to meet the goal of the task. The *Knowledge Transfer Plan* should include at a minimum:
 - Specific policy and planning efforts this project is expected to inform.
 - Specific stakeholder groups and energy policy and planning practitioners who will utilize the results of this project.
 - Proposed activities the recipient will conduct to ensure the tools and results from this project be utilized and adopted by the groups identified above.

EXHIBIT A

Scope of Work

- Present the *Draft Knowledge Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Knowledge Transfer Plan*. This document will identify:
 - TAC comments the recipient proposes to incorporate into the *Final Knowledge Transfer Plan*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit the *Final Knowledge Transfer Plan* to the CAM for approval.
- Implement the activities as described in the *Final Knowledge Transfer Plan*.
- Develop a *Knowledge Transfer Summary Report* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the *Final Technology Transfer Plan*. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an CEC- sponsored conference/workshop(s) on the project.
- Provide at least (6) six *High Quality Digital Photographs* (minimum resolution of 1300 x 500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

Products:

- Knowledge Transfer Plan (Draft/Final)
- Summary of TAC Comments
- Technology Transfer Summary Report (Draft/Final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: THE RAND CORPORATION

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 PIR-20-008 with The RAND Corporation for a \$964,721 grant to fund research to develop an analytical framework to identify locations in Southern California where decommissioning can occur in an equitable, and cost-effective way. Using detailed models of the gas system with data on the socioeconomic conditions of candidate communities, the team will evaluate different decommissioning sites and approaches in the Southern California Gas Company service territory; 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 CEC 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 9, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Patricia Carlos
Secretariat