

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement PIR-14-020 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
ERDD	Kevin Uy	43	916-327-1533

Recipient's Legal Name	Federal ID Number
Las Gallinas Valley Sanitary District	94-6033439

Title of Project
Las Gallinas Valley Biogas Energy Recovery System (BERS) Project

Term and Amount	Start Date	End Date	Amount
	6/30/2015	5/31/2018	\$ 999,070

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

Proposed Business Meeting Date	5/27/2015	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Kevin Uy	Time Needed:	5 minutes

Please select one list serve. Select

Agenda Item Subject and Description

LAS GALLINAS VALLEY SANITARY DISTRICT. Proposed resolution approving agreement PIR-14-020 with Las Gallinas Valley Sanitary District for a \$999,070 grant to install and operate a pre-commercial biogas energy recovery system that will convert biogas from a wastewater treatment plant into conditioned digester gas for combined heat and power generation and renewable compressed natural gas for use as transportation fuel.

California Environmental Quality Act (CEQA) Compliance

- 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
- 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 15302, 15303, and 15304
 - Common Sense Exemption. 14 CCR 15061 (b) (3)
 - Explain reason why Agreement is exempt under the above section:
 - The agreement is exempt for the following reasons: (i) the location is not a "particularly sensitive environment" within the meaning of CEQA Guidelines section 15300.2, subdivision (a); (ii) combined with successive projects of the same type in the same location, the project will not create a significant cumulative impact; (iii) there are no unusual circumstances creating a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances; (iv) the project will not result in damages to scenic resources within a highway officially designated as a state scenic highway; (v) the location is not on a hazardous waste site included on a list compiled pursuant to Government Code section 65962.5; (vi) the project will not cause any substantial adverse change in the significance of any historical resource, and (vii) no significant effects relating to traffic, noise, air quality, biological resources or water quality will occur.
 - 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	

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

Legal Company Name:	Budget
Cornerstone Environmental Group, LLC	\$ 115,900

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CALIFORNIA ENERGY COMMISSION



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

Legal Company Name:

NONE

Budget Information

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
NG Subaccount, PIERDD	13-14	501.001H	\$61,779
NG Subaccount, PIERDD	14-15	501.001I	\$937,291
R&D Program Area: EGRO: Renewables		TOTAL:	\$999,070
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Susan McGuire			Name:	Michael Cortez		
Address:	300 SMITH RANCH RD			Address:	300 SMITH RANCH RD		
City, State, Zip:	SAN RAFAEL, CA 94903-1929			City, State, Zip:	SAN RAFAEL, CA 94903-1929		
Phone:	415-472-1734 /	Fax:	- -	Phone:	450-472-1734 /	Fax:	- -
E-Mail:	smcguire@lgsd.org			E-Mail:	mcortez@lgsd.org		

Selection Process Used

<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: PON-14-505
<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

EXHIBIT A Scope of Work

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Contract Execution
3		Final Project Design and Pre-Construction Activities
4	X	Project Construction and Deployment Tasks
5		Evaluation of Project Benefits
6		Technology /Knowledge Transfer Activities
7		Project Readiness Plan

B. Acronym/Term List

Acronym/Term	Meaning
BERS	Biogas Energy Recovery System
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CDG	Conditioned Digester Gas
CHP	Combined Heat and Power
CPR	Critical Project Review
LGVSD	Las Gallinas Valley Sanitary District
M&V	Measurement and Verification
RCNG	Renewable Compressed Natural Gas
RNG	Renewable Natural Gas
TAC	Technical Advisory Committee
WWTP	Wastewater Treatment Plant

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

A. Purpose of Agreement

The purpose of this Agreement is to fund a pre-commercial Biogas Energy Recovery System (BERS) that will convert gas produced from Wastewater Treatment Plant (WWTP) operations into biogas; convert a portion of the biogas into conditioned digester gas (CDG) for use in combined heat and power (CHP) generation; and convert the remaining portion of the biogas into renewable natural gas (RNG) and renewable compressed natural gas (RCNG) for use in auxiliary boilers and as transportation fuel, respectively. This will maximize utilization of available alternate feedstocks produced on-site, improve energy efficiency, and reduce greenhouse gas emissions.

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

B. Problem/ Solution Statement

Problem

Wastewater treatment facilities are energy-intensive to operate and produce greenhouse gas emissions and residuals that are costly to manage. The potential to generate renewable energy for the mesophilic anaerobic digestion of wastewater sludge at facilities is significant. However, due to barriers – mainly cost – most facilities flare the gas produced from daily operations and do not utilize it as a source of renewable energy.

Solution

The Las Gallinas Valley Sanitary District (LGVSD) Wastewater Recycled Water Facility will build and operate a pre-commercial BERS that will capture 100 percent of the methane produced from mesophilic anaerobic digestion of wastewater sludge at the facility and convert the methane into CDG, RNG, and RCNG for CHP generation and transportation fuel use. Any waste gas produced will be returned to the system for conversion into biogas, therefore no waste gas will be produced and there will be no need for a flare, except during certain times, in this closed loop system. As more wastewater treatment facilities are becoming focused on energy efficiency and energy production on-site to reduce costs, the project will help demonstrate a technological strategy for them to do so, which will benefit natural gas ratepayers and the state of California.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Demonstrate the feasibility and affordability of an integrated biogas conditioning, CHP, and vehicle refueling system at a WWTP to reduce capital costs through increased system efficiency and maximum utilization of on-site alternate feedstocks; and
- Validate the capability for WWTPs to maximize renewable energy generation and distribution on-site in order to conserve non-renewable natural gas supplies and reduce greenhouse gas emissions.

Ratepayer Benefits: This Agreement will result in the ratepayer benefits of greater reliability, lower costs, and increased safety in the following ways:

- **Greater Reliability:** The BERS will generate all necessary biogas to operate the facility at full capacity. Wastewater treatment is energy intensive and by eliminating the need for external natural gas supplies the proposed project will provide greater reliability.
- **Lower Costs:** The proposed project will 1) demonstrate the reduced operating costs for the District and 2) will reduce the demand on non-renewable natural gas supplies.
- **Increased Safety:** By employing state-of-the-art controls, best practices for safety, and eliminating the potential for islanding, the proposed distributed generation system will maintain the safety of the grid.

EXHIBIT A

Scope of Work

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 enabling 100 percent capture of available methane in the digester gas produced for on-site energy and fuel use at the Project site. Any waste gas will be returned to the biogas conditioning system for energy recovery in the microturbines and conversion to RNG. This new approach for state wastewater treatment facilities will provide a cost-effective, efficient technological strategy for maximizing on-site bioenergy resources for renewable energy production. In addition, the proposed project will be the first in California to produce both CDG and RNG for CHP and RCNG for use in vehicles at a wastewater treatment facility. The state-of-the-art LGVSD BERS will incorporate the use of microturbines and a high efficiency package boiler to provide maximum energy efficiency and emissions reductions, while achieving 100 percent utilization of methane to produce biogas for on-site renewable energy use.

Agreement Objectives

The objectives of this Agreement are to:

- Design, build, and install a pre-commercial BERS at the LGVSD WWTP that produces both CDG and RNG for CHP generation and RCNG for use as a transportation fuel;
- Design, build, and install a CHP system which provides electricity and heat for on-site use;
- Design, build, and install a RCNG refueling station which provides transportation fuel for on-site use;
- Operate the BERS, CHP system, and refueling station;
- Produce sufficient CDG for operation of the CHP system;
- Produce sufficient RNG for operation of the CHP system;
- Produce sufficient RCNG for operation of the refueling station; and
- Share knowledge gained in this demonstration with sanitation districts and wastewater treatment facilities throughout California through webinars, signage, publications, and other outreach.

EXHIBIT A

Scope of Work

II. 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

- 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.
- Submit the final product to the CAM once agreement has been reached on the draft. The CAM will provide written approval of the final product within 15 days of receipt, unless otherwise specified in the task/subtask for which the product is required.
- If the CAM determines that the final product does not sufficiently incorporate his/her comments, submit the revised product to the CAM within 10 days of notice by the CAM, unless the CAM specifies a longer time period.

For products that require a final version only

- Submit the product to the CAM for approval.
- If the CAM determines that the product requires revision, submit the revised product to the CAM within 10 days of notice by the CAM, unless the CAM specifies a longer time period.

For all products

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

- **Electronic File Format**

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

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

EXHIBIT A

Scope of Work

- 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 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;

EXHIBIT A

Scope of Work

- 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.

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.

EXHIBIT A

Scope of Work

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 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.

EXHIBIT A Scope of Work

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

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

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
 - Summarize all Agreement activities conducted by the Recipient for the preceding month, including 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.
 - Provide a synopsis of the project progress, including accomplishments, problems, milestones, products, schedule, fiscal status, and any evidence of progress such as photographs.
- Submit a monthly or quarterly *Invoice* that follows the instructions in the "Payment of Funds" section of the terms and conditions. In addition, each invoice must document and verify:

EXHIBIT A

Scope of Work

- Energy Commission funds received by California-based entities;
- Energy Commission funds spent in California (*if applicable*); and
- Match fund expenditures.

Products:

- Progress Reports
- Invoices

Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. The CAM will review and approve 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 a 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.
- Submit a draft of the outline to the CAM for review and comment.
- Once agreement has been reached on the draft, submit the final outline to the CAM. The CAM will provide written approval of the final outline within 10 days of receipt.

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

- Style Manual

Subtask 1.6.2 Final Report

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline and the Style Manual provided by the CAM.
- Submit a draft of the report to the CAM for review and comment. Once agreement on the draft report has been reached, the CAM will forward the electronic version for Energy Commission internal approval. Once the CAM receives approval, he/she will provide written approval to the Recipient.
- Submit one bound copy of the Final Report to the CAM.

Products:

- Final Report (draft and final)

EXHIBIT A Scope of Work

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

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

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

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

Products:

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

EXHIBIT A Scope of Work

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 the 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.

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.

EXHIBIT A

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- 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.

Products:

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

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III. TECHNICAL TASKS

TASK 2 CONTRACT EXECUTION

The goals of this task are to: (1) confirm the availability of the engineering subcontractor and a Measurement and Verification (M&V) subcontractor; and (2) execute any agreements necessary to secure the engineering subcontractor and M&V subcontractor.

Subtask 2.1 Execute a Contract with the Selected Engineering Subcontractor

The goal of this subtask is to confirm the availability of the engineering subcontractor and execute an agreement to secure the engineering subcontractor.

The Recipient shall:

- Reach agreement with the manager(s) of the selected engineering subcontractor regarding the project timeline, space reserved for the project, equipment installation, permit and insurance requirements, indemnity, and the Recipient's use of any removal or support staff.
- Execute and provide a *Copy of a Contract with the Engineering Subcontractor*.
- If the selected engineering subcontractor becomes unavailable during the project term, work with the CAM to select a new subcontractor(s).

Products:

- Copy of Contract with the Engineering Subcontractor

Subtask 2.2 Execute a Contract with the Selected M&V Subcontractor

The goal of this subtask is to confirm the availability of the M&V subcontractor and execute an agreement to secure the M&V subcontractor.

The Recipient shall:

- Confirm the selected M&V subcontractor's ability to provide required hardware, software, and staff to conduct the required measurements during the project term.
- Confirm that the selected M&V subcontractor will follow utility M&V protocols, and will prepare a detailed analytical report that verifies natural gas consumption and engineering calculations for natural gas savings.
- If the selected M&V subcontractor becomes unavailable during the project term, the Recipient shall work with the CAM to select a new M&V contractor.
- Execute and provide a *Copy of a Contract with the M&V Subcontractor* that secures the contractor's services during the project term and confirms that the contractor will follow M&V protocol and prepare the detailed analytical report.

Products:

- Copy of Contract with the M&V Subcontractor

TASK 3 FINAL PROJECT DESIGN AND PRE-CONSTRUCTION ACTIVITIES

The goal of this task is to perform a variety of pre-construction activities including finalizing the project design, equipment and materials procurement, and the development of a construction timeline.

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Subtask 3.1 Civil, Structural, Mechanical, and Electrical and Instrumentation Design

The goal of this subtask is to finalize all design plans, drawings, and specifications that support the build, installation, and operation of the LGVSD BERS Project.

The Recipient shall:

- Finalize and provide *Final Civil Design Plan*, drawings, and specifications to support installation of the wastewater recycled water facility upgrades, microturbines, biogas conditioning equipment, and CNG fueling stations, including:
 - Facility general arrangement at both the wastewater recycled water facility and the Smith Ranch Pump Station;
 - Site Improvements design (grading);
 - Foundations;
 - Site utilities and other piping alignment design;
 - Site restoration design; and
 - Stormwater and erosion control design.
- Finalize and provide *Final Structural Design Plan*, drawings, and specifications to support installation of the equipment, including:
 - Geotechnical data review;
 - Seismic design performance requirements based on the geotechnical data;
 - Equipment pads for the microturbines CHP system, RNG/CNG fuel upgrading equipment, and CNG fueling stations systems; and
 - Canopies for the control panels for the microturbines CHP system, RNG/CNG fuel upgrading equipment, and CNG fueling station systems.
- Finalize and provide *Final Mechanical Design Plan*, drawings, and specifications to support installation of the equipment, including:
 - Eliminating ventilation requirements for the existing engine room;
 - Schematic design for the heat recovery hot water system;
 - Mechanical details for the hot water system;
 - Pump schedules for the hot water system;
 - Pump, piping, and control specifications for the hot water system;
 - Boiler specifications;
 - Stack specifications and details for microturbines;
 - Piping insulation;
 - Process interface diagram;
 - Coordination of mechanical piping with civil design;
 - Piping details, such as support details where required, equipment connections, gas train components and detail for pre-purchased equipment, and in-line instrument mounting details; and
 - Equipment setting and piping plans for pre-purchased equipment.
- Finalize and provide *Final Electrical Design Plan*, drawings, and specifications to support installation of the equipment, including:
 - Electrical site plan for the wastewater recycled water facility (buried conduits/duct banks, equipment and panel locations, and site lighting);
 - Power 1-line diagram for the facility;
 - Power 1-line diagram for Smith Road Pump Station;
 - Schematic power and conduit riser diagram for equipment interconnection;
 - Panel Schedule;
 - Electrical details;

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- Schematic instrumentation riser for equipment and device connection to control panels;
- Network diagram; and
- Instrumentation mounting details.

Products:

- Final Civil Design Plan
- Final Structural Design Plan
- Final Mechanical Design Plan
- Final Electrical Design Plan

Subtask 3.2 Construction/Equipment Lists and Construction Timeline

The goal of this subtask is to develop construction and equipment lists in accordance to the Project timeline, in order effectively implement the Project.

The Recipient shall:

- Prepare and provide a *Construction and Equipment Lists* documenting the comprehensive construction costs. The Construction and Equipment List will include all items to be purchased, constructed, or installed on the project. For each item, the letter shall provide:
 - The name of the item;
 - The make, model, size, capacity or other information as appropriate to the item;
 - The name of the entity that will be carrying out the purchase and/or supply or installation of the item; and
 - The estimated or bid cost to purchase and install the item.
- Develop and provide a *Construction Timeline* running from the intended date to begin construction until the commercial operation date of the project; and
- Use the Construction and Equipment Lists to procure all equipment and materials required to begin construction.

Products:

- Construction and Equipment Lists
- Construction Timeline

TASK 4 PROJECT CONSTRUCTION AND OPERATIONS

The goals of this task are to prepare the project for pre-commercial operations and to operate it for 12 months (or shorter period as approved in writing by the CAM).

Subtask 4.1 Project Construction

The goal of this subtask is to complete construction at the Project site for demonstration and operation.

The Recipient shall:

- Execute construction of the project as outlined in the approved Construction Timeline and Construction and Equipment lists. This construction shall include the following major components:
 - Site Layout;

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- Civil and Site Work;
- CHP Equipment Installation;
- Digester Gas Conditioning System; and
- Vehicle Fueling Stations.
- Verify completion of construction through creation of *Written Notice of Completion of Construction* which shall include:
 - Photographs of:
 - Earthwork during construction;
 - Trenching and piping during construction;
 - Installation of each major system component; and
 - Completed system.
- Prepare and provide *System Training and Safety Manual*.

Products:

- Written Notice of Completion of Construction
- System Training and Safety Manual (draft and final)

Subtask 4.2 Project Startup

The goals of this subtask are to start up the system and test equipment for operational readiness.

The Recipient shall:

- Conduct:
 - Process Hazard Analysis
 - Pre-Startup Safety Review
- Use System Training and Safety Manual to conduct training for operational personnel;
- Develop and provide an *Operational Readiness Test Plan* that describes system performance testing and includes test objectives, procedures, conditions, facilities, and equipment;
- Startup and commission plant;
- Execute Operational Readiness Testing in accordance with *Operational Readiness Test Plan*;
- Prepare and provide a *Written Notification of Pre-Commercial Operations* which shall include:
 - The date the project achieved pre-commercial operation(s);
 - A narrative on the current status of the project and initial operations;
 - Any changes made from the project as originally proposed and reasons for those changes; and
 - Photographs of the operational facility.
- Participate in a CPR Meeting in accordance with subtask 1.3.
- Prepare a *CPR Report* in accordance with subtask 1.3.

Products:

- Operational Readiness Test Plan (draft and final)
- Written Notification of Pre-Commercial Operations
- CPR Report

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Subtask 4.3 Operations

The goals of this subtask are to operate the facility for the 12-month operations period (or shorter period as approved in writing by the CAM) and comply with all applicable regulatory standards.

The Recipient shall:

- Operate the facility in accordance with all relevant regulations;
- Monthly operations will be summarized in Progress Reports (see subtask 1.5) which shall include but are not be limited to the following information:
 - A narrative on operational highlights from the previous month, including any stoppages in production and a statement as to the project's compliance with regulatory requirements.
 - The total amount of products produced on a monthly basis. Products include:
 - CDG produced
 - RNG produced
 - RCNG produced
 - The direct operational costs of the project.
- Prepare and provide an *Operations Summary Report* which summarizes twelve months of operational data including total production and operational costs.

Products:

- Operations Summary Report (draft and final)

Subtask 4.4 Data Collection and Analysis

The goals of this subtask are to collect operational data from the project, to analyze that data for economic and environmental impacts, and to include the data and analysis in the Final Report (subtask 1.6).

The Recipient shall:

- Develop and provide a *Data Collection and Analysis Report* which summarizes the throughput, usage, and operations data from the project including, but not limited to:
 - Biogas production
 - Expected air emissions reduction, including but not limited to the following species:
 - Methane
 - Hydrogen Sulfide
 - Oxides of nitrogen
 - Specific jobs and economic development resulting from this project.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.
- Compare any project performance and expectations provided in the proposal to the Energy Commission with actual project performance and accomplishments.

Products:

- Data Collection and Analysis Report (draft and final)

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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 natural gas, energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
 - Greenhouse gas and criteria emissions reductions.
 - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
 - Additional Information for Product Development Projects:
 - Outcome of product development efforts, such copyrights and license agreements.
 - Units sold or projected to be sold in California and outside of California.
 - Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
 - Investment dollars/follow-on private funding as a result of Energy Commission funding.
 - Patent numbers and applications, along with dates and brief descriptions.
 - Additional Information for Product Demonstrations:
 - Outcome of demonstrations and status of technology.
 - Number of similar installations.
 - Jobs created/retained as a result of the Agreement.
 - For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.

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- 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.

Products:

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

TASK 6 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

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

The Recipient shall:

- Prepare an *Initial Fact Sheet* at start of the project that describes the project. Use the format provided by the CAM.
- Prepare a *Final Project Fact Sheet* at the project's conclusion that discusses results. Use the format provided by the CAM.
- Prepare a *Technology/Knowledge Transfer Plan* that includes:
 - An explanation of how the knowledge gained from the project will be made available to the public, including the targeted market sector and potential outreach to end users, utilities, regulatory agencies, and others.
 - A description of the intended use(s) for and users of the project results.
 - Published documents, including date, title, and periodical name.
 - Copies of documents, fact sheets, journal articles, press releases, and other documents prepared for public dissemination. These documents must include the Legal Notice required in the terms and conditions. Indicate where and when the documents were disseminated.
 - A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
 - The number of website downloads or public requests for project results.

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- 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 on the results of the project.
- Prepare a *Technology/Knowledge Transfer Report* on technology transfer activities conducted during the project.

Products:

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

TASK 7 Production Readiness Plan

The goal of this task is to determine the steps that will lead to the manufacturing of technologies developed in this project or to the commercialization of the project's results.

The Recipient shall:

- Prepare a *Production Readiness Plan*. The degree of detail in the plan should be proportional to the complexity of producing or commercializing the proposed product, and to its state of development. As appropriate, the plan will discuss the following:
 - Critical production processes, equipment, facilities, personnel resources, and support systems needed to produce a commercially viable product.
 - Internal manufacturing facilities, supplier technologies, capacity constraints imposed by the design under consideration, design-critical elements, and the use of hazardous or non-recyclable materials. The product manufacturing effort may include "proof of production processes."
 - The estimated cost of production.
 - The expected investment threshold needed to launch the commercial product.
 - An implementation plan to ramp up to full production.
 - The outcome of product development efforts, such as copyrights and license agreements.
 - Patent numbers and applications, along with dates and brief descriptions.
 - Other areas as determined by the CAM.
 - Integration design best practices to cost effectively clean biogas for use in CHP
 - Integration design best practices to cost effectively recycle tail gas to prevent loss of methane from system
 - Economic data and analysis to show viability of integrated BERS, CHP and RCNG refueling station based upon demonstration at LGVSD

Products:

- Production Readiness Plan (draft and final)

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IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: LAS GALLINAS VALLEY SANITARY DISTRICT

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

RESOLVED, that the Energy Commission approves Agreement PIR-14-020 from PON-14-505 with **Las Gallinas Valley Sanitary District** for a **\$999,070** grant to install and operate a pre-commercial biogas energy recovery system that will convert biogas from a wastewater treatment plant into conditioned digester gas for combined heat and power generation and renewable compressed natural gas for use as transportation fuel; 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 June 10, 2015.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Harriet Kallemeyn,
Secretariat