

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement EPC-14-052 (To be completed by CGL Office)

| Division | Agreement Manager: | MS- | Phone |
|----------|--------------------|-----|--------------|
| ERDD | Abolghasem Edalati | 43 | 916-327-1499 |

| Recipient's Legal Name | Federal ID Number |
|--------------------------------|-------------------|
| Organic Energy Solutions, Inc. | 46-5051277 |

| Title of Project |
|---|
| Community Scale Digester with Advanced Interconnection to the Electrical Grid |

| Term and Amount | Start Date | End Date | Amount |
|-----------------|------------|----------|--------------|
| | 6/1/2015 | 5/31/18 | \$ 5,000,000 |

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

| | | | |
|--------------------------------|--------------------|----------------------------------|--|
| Proposed Business Meeting Date | 4/8/2015 | <input type="checkbox"/> Consent | <input checked="" type="checkbox"/> Discussion |
| Business Meeting Presenter | Abolghasem Edalati | Time Needed: | |

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

Agenda Item Subject and Description

ORGANIC ENERGY SOLUTIONS, INC. Proposed resolution approving Agreement EPC-14-052 with Organic Energy Solutions, Inc. for a \$5,000,000 grant to develop an innovative 100 ton per day anaerobic digester system that will convert organic waste from a grocery store distribution center and wastewater to clean renewable electricity integrated with peak load strategies for the grid.

California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?
 Yes (skip to question 2) No (complete the following (PRC 21065 and 14 CCR 15378)):
 Explain why Agreement is not considered a "Project":

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

 a) Agreement **IS** exempt. (Attach draft NOE)

 Statutory Exemption. List PRC and/or CCR section number: _____

 Categorical Exemption. List CCR section number: _____

 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

 Environmental Impact Report

 Negative Declaration

 Statement of Overriding Considerations

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

| Legal Company Name: | Budget |
|---------------------|--------------|
| Clean World | \$ 3,629,119 |
| PlanNet | \$ 1,078,027 |

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

| Legal Company Name: |
|---------------------|
| |

Budget Information

| Funding Source | Funding Year of Appropriation | Budget List No. | Amount |
|-----------------------------------|-------------------------------|----------------------|-------------|
| EPIC | 13-14 | 301.001A | \$5,000,000 |
| | | | \$ |
| | | | \$ |
| R&D Program Area: | EGRO: Renewables | TOTAL: | \$5,000,000 |
| Explanation for "Other" selection | | | |
| Reimbursement Contract #: | | Federal Agreement #: | |

GRANT REQUEST FORM (GRF)

| Recipient's Administrator/ Officer | | | | Recipient's Project Manager | | | |
|------------------------------------|----------------------------|------|-----|-----------------------------|-----------------------------|------|-----|
| Name: | Roxanne Petteway | | | Name: | Victoria Tyson-Bloyd | | |
| Address: | 27475 YNEZ ROAD, SUITE 437 | | | Address: | 2951 SATURN STREET, SUITE E | | |
| City, State, Zip: | TEMECULA, CA 92591-4612 | | | City, State, Zip: | BREA, CA 92821-6206 | | |
| Phone: | 951-704-0170 / | Fax: | - - | Phone: | 909-383 -8341 / | Fax: | - - |
| E-Mail: | roxanne@pettewaymgmt.com | | | E-Mail: | vtyson@pettewaymgmt.com | | |

| Selection Process Used | |
|---|----------------------------|
| <input checked="" type="checkbox"/> Competitive Solicitation | Solicitation #: PON-14-305 |
| <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 | | Preconstruction and Planning |
| 3 | X | Design Development and Cost Estimating |
| 4 | | Procurement and Fabrication of System Components |
| 5 | X | Construction and Onsite Fabrication of System Components |
| 6 | | System Test, Startup and Achieving Full Operational Status |
| 7 | | Data Collection and Analysis |
| 8 | | Evaluation of Project Benefits |
| 9 | | Technology/Knowledge Transfer Activities |

B. Acronym/Term List

| Acronym/Term | Meaning |
|--------------|------------------------------------|
| AD | Anaerobic Digester |
| CAM | Commission Agreement Manager |
| CAO | Commission Agreement Officer |
| CPR | Critical Project Review |
| EPIC | Electric Program Investment Charge |
| GHG | Greenhouse Gas |
| LCOE | Levelized Cost of Electricity |
| OES | Organic Energy Solutions |
| P&ID | Piping and Instrumentation Diagram |
| TAC | Technical Advisory Committee |
| TPD | Ton Per Day |

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

A. Purpose of Agreement

The purpose of this Agreement is to fund an innovative 100 ton per day (TPD) anaerobic digester (AD) system – co-located at a critical facility – that will include equipment to process organic waste from a local grocery store distribution center as well as organics recovered from wastewater. This project will increase waste diversion for San Bernardino by up to 40,000 tons per year, providing a facility to recycle organic waste as well as up to 8,760 megawatt hours of renewable electricity that will be sent to Southern California Edison’s local grid and include demonstration of pre-commercial peak load shifting and energy storage strategies.

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

New projects with peak load shifting and energy storage are required for the independently owned utilities to meet their Assembly Bill 2514 energy storage goals. Traditional methods which can be cost prohibitive, requiring high capital output to purchase biogas storage systems.

Co-West Commodities owns and operates a pre-treatment facility for wastewater that has begun an innovative pilot to remove the organics from the wastewater stream and concentrate the solids to create a high strength feedstock slurry for an AD. Without an onsite digester system this slurry would either need to be hauled over 60 miles to the Hyperion wastewater treatment facility or discharged to sewer, increasing the burden on San Bernardino's waste water system.

Solution

The Recipient proposes to install, start-up and commission an on-site, high rate anaerobic digester (AD) system to process approximately 36,500 tons per year of source separated grocery store waste as well as the high strength slurry. This will provide a reliable outlet for the treatment of these waste streams and eliminate the transportation cost for the slurry feedstock.

This project will revolutionize digesters' ability to act as an energy storage device as follows:

1. By demonstrating the ability to shift peak load without gas or electricity storage using only strategic transfers between the process tanks
2. By improving software processes through data logging the relationship between transfers of material and the amount of biogas produced
3. By allowing the operator to tap into the energy stored in the hydrolyzed food waste during peak hours by transferring increased amounts of this material to the methanogenesis tank (the tank where generated methane is stored), just prior to the time of day when peak power production is desired. This advancement will increase the economic return for these facilities, allowing many more food waste-to-electricity projects to be deployed without the need for grant funds or other incentives.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Design, commission, and operate an innovative 3 stage AD system co-located with a critical wastewater pre-treatment facility that will accept organics recovered from the wastewater as well as local grocery store waste
- Demonstrate a pre-commercial peak loading strategy without the capital cost of biogas storage or energy storage by utilizing the transfer cycles between tanks to increase biogas production during strategic hours of operation
- Showcase an efficient connection of an aerobic digester to the local grid while also providing islanding capability to increase power reliability for a critical facility
- Utilize Senate Bill (SB) 1122 Bioenergy Feed-in Tariff for distribution to Southern California Edison's grid
- Evaluate the operational and performance success of the new peak load shifting strategy

Exhibit A Scope of Work

- Demonstrate increased economic feasibility for small scale digestion projects through the implementation of the new strategies and improvements to traditional systems included in this project scope

Ratepayer Benefits:²

The proposed project will provide benefits to the California IOU electricity ratepayers consistent with Electric Program Investment Charge (EPIC) goals:

Greater Reliability: The proposed project will provide reliable renewable electricity that can be forecast in advance. Unlike wind and solar renewable alternatives, the proposed project will provide renewable electricity without the need for standby and backup power. The proposed project can provide power during peak energy demand and shoulder times offering the stability of consistent electricity generation.

Lower Costs: The B&V LCOE model, with input described in Section 3.f., shows a LCOE of \$122/MWh. This represents a cost competitive Category 1 renewable energy resource that can accept a price offering lower than the proposed \$124/MWh starting price.³

Increased Safety: The proposed facility will be equipped with state-of-the-art protection devices to insure line safety for workers. In the case when micro-grid may be required, the use of a synchronous generator would allow for islanded operations. Although the system will not be configured for islanded operations at this point, modifications would be made to allow for micro-grid operations during emergencies (e.g., long term power outage due to natural disasters).

Technological Advancement and Breakthroughs:⁴ 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 demonstrating community scale anaerobic digestion with increased efficiency in connecting to the electrical grid. The full scale deployment of AD projects will economically store energy to take advantage of higher electricity rates during peak hours, provide a reliable outlet for the wastewater treatment and grocery waste streams, and eliminate the transportation cost for the slurry feedstock.

Agreement Objectives

Technical Objectives:

- Design, engineer, and construct the digester facility
- Create diversion of organics from grocery store distribution center
- Recover organics from wastewater in San Bernardino and divert to digester
- Generate 8,760,000 kWh of renewable electricity per year
- Create 1,226 tons of residual solids for use as vermicomposting feedstock per year
- Create 9.6M gallons of liquid effluent for fertilizer production per year
- Create 600,000 therms of waste heat per year for use in Co-West boilers

² California Public Resources Code, Section 25711.5(a) requires projects funded by the Electric Program Investment Charge (EPIC) to result in ratepayer benefits. The California Public Utilities Commission, which established the EPIC in 2011, defines ratepayer benefits as greater reliability, lower costs, and increased safety (See CPUC "Phase 2" Decision 12-05-037 at page 19, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF).

³ CPUC Staff Proposal on SB 1122 Implementation, November 19, 2013.

⁴ California Public Resources Code, Section 25711.5(a) also requires EPIC-funded projects to lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory and energy goals.

Exhibit A Scope of Work

- Create a net greenhouse gas (GHG) offset of 4,125 MT CO₂e annually

Economic Objectives:

- Demonstrate technical feasibility of peak load shifting without additional capital cost to project
- Create up to 60 short-term manufacturing jobs in Marysville, CA where fabrication will occur
- Create 20 short-term construction jobs in San Bernardino, California
- Create 6 long-term operations jobs in San Bernardino

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:

Exhibit A Scope of Work

- **Electronic File Format**

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

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

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

- **Software Application Development**

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

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

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

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.

Exhibit A Scope of Work

The Recipient shall:

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

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

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

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

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

The CAM shall:

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

Recipient Products:

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

CAM Product:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

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

Exhibit A Scope of Work

(if applicable). Participants will include the CAM and the Recipient, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

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

The Recipient shall:

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

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

Exhibit A Scope of Work

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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

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

Products:

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

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

Exhibit A Scope of Work

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:
 - 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

Exhibit A Scope of Work

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)

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.

Exhibit A Scope of Work

Products:

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

Subtask 1.8 Permits

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

The Recipient shall:

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

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

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

Products:

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

Subtask 1.9 Subcontracts

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

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subcontract.

Exhibit A Scope of Work

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

Products:

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

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

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

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

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

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

Exhibit A Scope of Work

The Recipient shall:

- Participate in CPR meetings and produce CPR Reports which will include the CPR meeting notes and action items delegated during each CPR meeting.
- 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.

Products:

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

Exhibit A Scope of Work

III. TECHNICAL TASKS

TASK 2: PRECONSTRUCTION AND PLANNING

The goal of this task is to conduct planning activities necessary to initiate and execute construction in accordance with approved plans.

Task 2.1: Confirm Site Characteristics, Infrastructure Details and Logistics

The goal of this subtask is to confirm and validate prior site studies, existing infrastructure characteristics, and create a logistic plan.

The Recipient Shall:

- Formalize written feedstock agreements with Albertson's, or other provider approved by the CAM.
- Confirm project size & location
- Identify proximity to existing utilities (electric, water – potable and non-potable, sewer, natural gas, and fire control)
- Confirm access into and out of the site location for transportation of materials, equipment, employees and support services
- Prepare a *Feedstock Procurement Plan* which includes food waste procurement from grocers and high-strength slurry from the Co-West facility
- Obtain Feedstock Agreements which ensures a sustainable and consistent supply of food waste and high strength slurry for the AD

Products:

- Feedstock Procurement Plan (draft and final)

Task 2.2: Confirm Permitting (see Task 1.7) and Engineering Requirements

The goal of this subtask is to evaluate regulatory permitting requirements in conjunction with refinement of engineering design parameters.

The Recipient Shall

- Confirm permitting requirements (air, water, solid waste, storm drain) and determine construction approvals (building department, civil & structural, mechanical systems, electrical systems, fire and life safety, air quality management district).
- Review prior requirements and phase I development
- Compile a single, updated requirements document
- Perform any shallow geotechnical investigation needed for structural calculations.
- Obtain *Power Purchase Agreement* which ensures the electrical energy is procured at a competitive, long-term, fixed price
- Prepare a *Site Work, Permitting, and System Requirements Report* which summarizes the site survey and analysis of the existing conditions, operation aspects, constraints on the property, planned modifications, permits obtained and status of outstanding permits, and interconnection requirements.

Products:

- Site Work, Permitting, and System Requirements Report (draft and final)
- Power Purchase Agreement

Exhibit A Scope of Work

Task 2.3: Project Coordination and Execution Meeting

The goal of this subtask is to bring together project stakeholders to review project scope, introduce key personnel, and project execution.

The Recipient Shall:

- Arrange one-on-one or group meetings to present plan
- Obtain and detail all lead agency (City of San Bernardino Planning & Building Departments) requirements
- Schedule monthly meetings with lead agency (City of San Bernardino Planning & Building Departments)
- Identify lead assistants for each requirement and schedule tasks for completion of the requirements
- Establish the lines of communications, meeting regime and distribution of information.
- Identify Stakeholders that affirm all final decisions for the project design.
- Prepare a *Project Coordination and Execution Meeting Report*

Products:

- Project Coordination and Execution Meeting Report

Task 3: DESIGN DEVELOPMENT AND COST ESTIMATING

The goal of this task is to generate final design documents and a design estimate of costs for procurement of construction resources.

Task 3.1: Preliminary Design

The goal of this subtask is to finalize system mass and energy balance taking into consideration peak load shifting within the control system design and to prepare process flow and instrumentation diagram(s) as necessary to describe the process sequences and unit operations.

The Recipient Shall:

- Establish Material Balance, by taking into consideration:
 - Inputs
 - Feedstock
 - Water
 - Outputs
 - Biogas
 - Co-products
 - Emissions & waste
- Establish Energy Balance, by taking into consideration:
 - Total Energy Output
 - Parasitic Energy Demand (Electric & Heat)
 - Net Energy Output (Electric & Heat)
 - Hot Water, Steam, Heated Air Considerations
- Consider Alternative Material and Energy Scenarios
- Design Control System for Peak Load Shifting Demonstration
- Create Process Flow Diagram and Unit Operations Descriptions
- Define top Level Process Sequences
- Develop Schematic Equipment Layout and P&ID

Exhibit A Scope of Work

- Develop Control Systems Additions for Peak Load Shifting
- Prepare a *Preliminary Design Report* which includes material balance, energy balance, top level process sequences and unit descriptions, process and instrumentation (P&ID) diagrams

Products:

- Preliminary Design Report (draft and final)

Task 3.2: Process and Equipment Alternatives, Cost Estimates and Economics

The goal of this subtask is to conduct alternative analysis on critical process components in order to specify the most cost effective units for procurement.

The Recipient Shall:

- Complete equipment evaluations and cost estimates for each of the following critical components:
 - Front End material preprocessing, contaminant removal and input system
 - Anaerobic Digestion system - alternative features
 - Contaminant removal system from AD tanks
 - Biogas Processing and refining system
 - Biogas Utilization - electrical generation components
 - Waste Heat Utilization system
 - Co-product Back End - solid and effluent processes
 - Peak Load Shifting Controls
 - Islanding Controls
 - Alternate Site and/or System Layout Schemes
 - Create a *Pre-qualified Equipment List*

Products:

- Pre-qualified Equipment List

Task 3.3: Final Selection, Approval and Specification of Processes and Equipment

The goal of this subtask is to generate final design drawings and specifications based upon outputs from Task 3.3.

The Recipient Shall:

- Develop schematic specifications for all purchased components
- Develop *Schematic Designs*, concepts and design methodology for any custom or semi-custom components and systems including control system and interface
- Identify design, engineering and drafting resources for next section

Product:

- Schematic Designs

Task 3.4: Complete Design and Construction Documents and Specifications

The goal of this subtask is to prepare the procurement package for public release to include statement of work, specifications, and design drawings.

Exhibit A Scope of Work

The Recipient Shall:

- Complete *Procurement Package Report* for purchased components that includes the following items:
 - Specifications, utilities, and operating parameters
 - Consumable and spare parts needed
 - Commercial Terms, freight, warranty, and service provisions
 - Schedule and time line for procurement (including approvals, ordering, and delivery)
- Complete *Design Package* for semi-custom and custom components and systems, including the following elements:
 - Site civil and drainage drawings
 - Site structural drawings
 - Site Utility drawings
 - Overview, elevations and plan views of the design
 - Detailed drawings of all critical components
 - Detailed P&ID showing all instrumentation and process elements
 - Mechanical, electrical & shop drawings
 - Control System design and interface hardware selection
 - Software and process control requirements specification
 - Construction Timeline/ schedule including procurement, fabrication, final assembly and shop site test
- Prepare a *CPR Report*.
- Participate in a CPR Meeting.

Products:

- Procurement Package Report (draft and final)
- Design Package (draft and final)
- CPR Report

TASK 4: PROCUREMENT AND FABRICATION OF SYSTEM COMPONENTS

The goal of this task is to procure components and manage the fabrication and assembly of equipment & systems. This includes both custom, proprietary hardware and licensed technologies that are integrated with off-the-shelf commercial equipment and instrumentation. All systems are to be tested and validated before the next integration step and again before transport to project site.

Task 4.1 Procurement Material Plan

The goal of this subtask is to prepare a material procurement plan which identifies sources, procurement lead times and schedule, and a format for status reporting.

The Recipient Shall:

- Identify all buyers and sources
- Create a procurement schedule & status report
- Develop procurement expediting and escalation provisions
- Plan late delivery contingencies for any major purchases
- *Draft Equipment Procurement and Delivery Report*

Exhibit A Scope of Work

Products:

- Equipment Procurement and Delivery Report (draft and final)

Task 4.2: Fabrication and Assembly Plan

The goal of this subtask is to prepare a fabrication and assembly plan which identifies suppliers, critical components, schedules resources, and management plan for delivery of fabricated components to the site.

The Recipient Shall:

- Identify fabrication suppliers & schedulers
- Create a *Critical Path Material and Services Plan*
- Schedule shop floor resources
- Determine the final assembly sequence
- Run shop site tests & determine acceptability of equipment
- Package and ship tested and accepted equipment to the project site

Products:

- Critical Path Material and Services Plan

TASK 5: CONSTRUCTION AND ONSITE FABRICATION AND ASSEMBLY

The goal of this task is to prepare the site; receive, assemble and install equipment, test and validate the system and perform inspections.

Task 5.1: Complete Site Preparation

The goal of the subtask is to ensure the site is prepared such that the equipment delivery and utility hook-up is not delayed.

The Recipient Shall:

- Create *Site Preparation Checklist*
- Perform site grading (cut & fill) to Civil Grading Plan
- Excavate footings, foundations and underground utilities
- Pour concrete footings, pads and structural supports
- Establish interconnections to ALL utilities
- Construct site walls, fences and gates
- Construct site security elements

Products:

- Site Preparation Checklist

Exhibit A Scope of Work

Task 5.2: Major Component Rigging, Setting and Anchoring

The goal of this subtask is secure required equipment according to building codes and permits.

The Recipient Shall:

- Precision set, assemble and insulate tanks
- Place skids and all major system components
- Anchor all equipment per the engineering specifications
- Create a *Summary Inspection Report* which includes inspection results for each major component.

Products:

- Summary Inspection Report

Task 5.3: Fabrication and Assembly

The goal of this subtask is to conduct quality control and assurances during execution of the construction project such that final the equipment is ready for final inspection and testing.

The Recipient Shall:

- Execute installation and construction of the project as outlined in the construction timeline in the Design Package. This construction shall include the following major components:
 - Front End Feedstock Collection, Transport and Preprocessing System
 - Anaerobic Digestion System
 - Contaminant Removal System for Anaerobic Digestion Tanks
 - Gas Processing Refining System
 - Gas Utilization Systems – Electrical generation and interconnection to grid
 - Back End Co-product Processing System
 - Co-generation of electricity and grid interconnection for net metering
- Perform construction oversight and installation quality assurance/quality control processes.
- Test all subsystems prior to commencing commercial operations
- Prepare a *Written Notification of Commercial Operation* and submit it to the Commission Project Manager within ten working days of commercial operation of the project. The Written Notification shall contain the following elements:
 - The date the project achieved commercial operation
 - A narrative of the current status of the project and initial operations
 - Any changes made from the project as originally proposed and reasons for the changes

Products:

- Written Notification of Readiness for Commercial Operation

Task 5.4: Testing and Validation

The goal of this task is to conduct necessary testing and inspections to confirm equipment and components meet specification and design criteria.

Exhibit A Scope of Work

The Recipient Shall:

- Verify all point-to-point connections
- Label all components and process lines
- Test installed equipment for wet and dry leaks
- Test and validate installed functionality of:
 - Hydrolysis tank delivery equipment
 - Contamination removal equipment
 - Hydraulic mixing and material circulation system assemblies
 - Heat exchanger system and valve assemblies
 - Heat exchanger boiler support system
 - Circulation piping systems and valve assemblies
 - Residue delivery system
 - Biogas collection systems
 - Computer controls system and control components
- Perform Inspections & Final Signoffs
- After installation, testing, and validation, all components and equipment will be inspected by the appropriate inspection agencies to obtain final signoff prior to commencing operations of the system.
- Prepare a construction close out documentation:
 - As-built/record documents
 - Warrantee
 - Operation & Maintenance manuals
 - Prepare a *System Installation, Assembly, and Testing Report*
- Prepare a *CPR Report*
- Participate in a CPR Meeting

Products:

- System Installation, Assembly, and Testing Report (draft and final)
- CPR Report

Task 6: SYSTEM TEST, STARTUP, AND ACHIEVING FULL OPERATIONAL STATUS

The goal of this task is to complete a final dry and wet test of the system, complete training orientation of operations personnel, initiate system feeding and start-up, initiate automatic controls, and attain operational status. This also includes the introduction of “biological seed” in the form of anaerobic sludge to initiate the AD process and ramp up of loading to achieve steady-state conditions at the designed loading rate (3 months).

Task 6.1: System Dry Simulation Followed By Wet Testing

The goal of this subtask is to conduct necessary initial operation runs to evaluate system performance.

The Recipient Shall:

- Validate all system instrumentations and controls
- Test and analyze peak load shifting capabilities
- Check pump & valve positions and perform a location and rotation check
- Run a dry leak test (leak down rate of tanks and piping)
- Repeat leak testing following introduction of water into all tanks, pipes and components

Exhibit A Scope of Work

- Test all heating systems & components
- Draft a *Quality Assurance Inspection Report*

Products:

- Quality Assurance Inspection Report

Task 6.2: System Feeding and Start-Up and Initiation of Automatic Controls

The goal of this subtask is evaluate the system performance to establish optimum feed rates.

The Recipient Shall:

- Acquire and transfer seed sludge to AD system
- Establish a feeding schedule and commence feeding
- Monitor feed ramp to maximum spec (3 months)
- Monitor digester performance including:
 - Gas production (flare, electric generation)
 - pH of each reactor
 - Solids concentration of feedstock and reactor liquids
- Create a *Data Transmittal Report*

Products:

- Data Transmittal Report

Task 6.3: System Documentation Updating

The goal of this subtask is prepare the documentation necessary for transfer to operations.

The Recipient Shall:

- Document Standard Operating Procedures (e.g. checklists, data collection, routine maintenance)
- Document Non-Standard Operating Procedures (e.g. troubleshooting, restarts, non-routing maintenance, equipment changes)
- Establish and implement a *Maintenance Plan* to include:
 - Preventive Maintenance Schedule
 - Spare Parts and Consumables
 - Contract Services

Products:

- Maintenance Plan

Task 6.4: System Achieves Steady-State and Normal Operations

The goal of this subtask is record system performance operational parameters and document for operations.

The Recipient Shall:

- Certify the steady-state system performance of AD, Gas cleaning system for compressed natural gas and co-production of electricity, heat and other value-added products vs. the original specification
- Record the steady-state “process fingerprint” (normal condition for instruments and parameters)
- Create a *System Start-Up and Operations Report*

Exhibit A Scope of Work

Products:

- System Start-Up and Operations Report (draft and final)

TASK 7: DATA COLLECTION AND ANALYSIS

The goal of this task is to collect and analyze operational data of the integrated system that includes feedstock collection, transport and preprocessing system, anaerobic digestion, gas processing refining, gas cleaning, electrical generation, waste heat utilization, back end co-product processing, and co-generation of electricity and grid interconnection, peak load shifting and islanding capabilities. This task will determine the economic viability and environmental impacts of the project. Final analysis of all project data must be included in the Final Report.

The Recipient Shall:

- Collect 6 months of operational data from electrical production system to include:
 - time operating (up and down time),
 - efficiency of conversion of feedstock,
 - electricity production rate,
 - quality and quantity of electricity produced,
 - peak load shifting analysis,
- Islanding testing and analysis
- Analyze the results of demonstrating peak load shifting at commercial scale with new strategy outlined in goals above
- Create a *Data Transmittal Report* of the data collection and analysis of all components of this task
- Test and explain the success of the islanding capability to support the critical facility during an interruption to the grid
- Explain how the project will reduce criteria air pollutants and air toxics and reduce or avoid multimedia environmental impact, and lead to a decrease, on a life cycle basis, in emissions of water pollutants or any other substances known to damage human health or the environment.
- Explain how the project incorporated and achieved the sustainability goals.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle scale greenhouse gas emissions.
- Quantify any water efficiency and water use reduction measures used in the project including, but not limited to, the use of recycled or reclaimed water and the reduction or elimination of point and nonpoint source wastewater discharge.
- Describe any potential use of renewable energy or cogeneration in the project.
- Describe any potential energy efficiency measures used in the project that would exceed Title 24 standards in Part 6 of the California Code of Regulations.
- Provide data on expected job creation, economic development, and increased state revenue.
- Compare any project performance and expectations provided in the proposal to Energy Commission with actual project performance and accomplishments.
- Describe how the project supports new technology advancement for anaerobic digestion of organics recovered from municipal solid waste, and promote the deployment of such technologies in the marketplace.
- Describe how the project demonstrated the cost-effectiveness of the proposed technology in achieving greenhouse gas emissions reduction.

Exhibit A Scope of Work

- Provide additional data that may be requested by the Energy Commission during the term of this Agreement, as is reasonably available.

Products:

- Data Transmittal Report (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.
 - 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.

Exhibit A Scope of Work

- For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.
 - An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
 - An estimate of energy and non-energy benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
- Respond to CAM questions regarding responses to the questionnaires.

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

Products:

- Kick-off Meeting Benefits Questionnaire, Attachment 12 Cost and Benefits Calculations, LCOE calculator or other, as applicable
- Mid-term Benefits Questionnaire, Attachment 12 Cost and Benefits Calculations, LCOE calculator or other, as applicable
- Final Meeting Benefits Questionnaire, Attachment 12 Cost and Benefits Calculations, LCOE calculator or other, as applicable

TASK 9: 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

Exhibit A Scope of Work

- documents were disseminated.
- A discussion of policy development. State if project has been or will be cited in government policy publications, or used to inform regulatory bodies.
- The number of website downloads or public requests for project results.
- Additional areas as determined by the CAM.
- Conduct technology transfer activities in accordance with the Technology/Knowledge Transfer Plan. These activities will be reported in the Progress Reports.
- When directed by the CAM, develop *Presentation Materials* for an Energy Commission-sponsored conference/workshop 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)

IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: ORGANIC ENERGY SOLUTIONS, INC.

WHEREAS the State Energy Resources Conservation and Development Commission (Energy Commission) is considering whether to approve Agreement EPC-14-052 with Organic Energy Solutions, Inc. for \$5,000,000.00 to develop an innovative 100 ton per day anaerobic digester system that will convert organic waste from a grocery store distribution center and wastewater to clean renewable electricity integrated with peak load strategies for the grid; and

WHEREAS the City of San Bernardino, acting as the lead agency for purposes of the California Environmental Quality Act (CEQA), reviewed the project proposed under this Agreement as part of the larger planned project “Park West Enterprises, Inc. dba Co-West Commodities Food- Industry Wastewater Treatment Plant, Anaerobic Digestion Facility and California Hazardous Waste Bulking & Transfer Facility,” and prepared a Final Initial Study/Mitigated Negative Declaration and a Conditional Use Permit that included a Mitigation Monitoring and Reporting Program (collectively the “City’s CEQA documents”); and

WHEREAS the Energy Commission, acting as a responsible agency for purposes of CEQA, has reviewed the City’s CEQA documents relative to the activities under this Agreement, has no information that indicates this documentation is inadequate, and has considered this documentation in deciding whether to approve funding for this Agreement; and

WHEREAS the Energy Commission will require Organic Energy Solutions, Inc. to affirm in this Agreement’s terms its commitment to carrying out the conditions and mitigation measures required in the City’s CEQA documents, and finds that with these conditions and mitigation measures that the Agreement’s activities will not have significant effect on the environment.

RESOLVED, that the Energy Commission approves Agreement EPC-14-052 with Organic Energy Solutions, Inc. for \$5,000,000.00 to develop an innovative 100 ton per day anaerobic digester system that will convert organic waste from a grocery store distribution center and wastewater to clean renewable electricity integrated with peak load strategies for the grid.

FURTHER BE IT RESOLVED, that this document authorizes the Executive Director to 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 April 8, 2015.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Harriet Kallemeyn,
Secretariat