STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015) CALIFORNIA ENERGY COMMISSION

New Agreement FPI-18-003 (To be completed by CGL Office)

ERDD	Chie Yee Yang	51	916-327-1536

Foster Poultry Farms	94-1543499

Foster Farms Food Processing Efficiency Project

	3/15/2019	3/30/2023	$ 2,666,652

☐ ARFVTP agreements under $75K delegated to Executive Director.

Proposed Business Meeting Date	2/20/2019	☐ Consent	☒ Discussion
Business Meeting Presenter	Kevin Uy	Time Needed:	5 minutes

Please select one list serve. Research (Energy RDD / PIER program)

Agenda Item Subject and Description

FOSTER POULTRY FARMS. Proposed resolution approving Agreement FPI-18-003 with Foster Poultry Farms for a $2,666,652 grant to fund energy efficient upgrades, including heat recovery systems and controls, at the recipient's five existing food processing facilities, and adopting staff's determination that this action is exempt from the California Environmental Quality Act. The project will replace existing conventional, aging equipment with high-efficiency equipment to reduce greenhouse gas emissions, energy use, and operating costs.

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

2. If Agreement is considered a "Project" under CEQA:
   ☒ a) Agreement **IS** exempt. (Attach draft NOE)
   ☐ Statutory Exemption. List PRC and/or CCR section number:
   ☒ Categorical Exemption. List CCR section number: Cal. Code Regs., tit 14, § 15301;
   ☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

   Explain reason why Agreement is exempt under the above section:
   The project will implement various efficiency measures across 5 facilities owned by the food processor. The commercially available technology that will be installed at the 5 facilities include boiler economizers, refrigeration optimization, heat recovery system, de-aerator tank, stack re-piping, and boiler controls. The result of the project will be determined through a measurement and verification period, which will quantify greenhouse gas reductions and energy savings across all facilities.

   14 C.C.R. §15301: The project involves minor alteration of existing facilities and mechanical equipment. Energy efficient equipment will be installed at existing food processing facilities. Some of the equipment will be additions to existing equipment, such as economizer installations on existing boilers. Other equipment will be new installations within the facility, such as control optimization, tanks, pumps, heat exchangers, sensors, motors, controllers, displays, drives, and piping. These installations will be minor alterations to mechanical equipment and the facility, with no expansion beyond the existing use of the food processing facilities and will not have significant effect on the environment."

   ☐ b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
   Check all that apply
   ☐ Initial Study
   ☐ Negative Declaration
   ☐ Mitigated Negative Declaration
   ☐ Environmental Impact Report
   ☐ Statement of Overriding Considerations

STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015) CALIFORNIA ENERGY COMMISSION

Legal Company Name:	Budget
Cascade Energy, Inc.	$ 72,063

Legal Company Name:

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
GGRF	17-18	301.002A	$2,666,652
			$
R&D Program Area: EERO: IAW			$2,666,652
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Name:	Albert Mulhim			Name:	Albert Mulhim		
Address:	1333 Swan St			Address:	1333 Swan St		
City, State, Zip:	Livingston, CA 95334-1559			City, State, Zip:	Livingston, CA 95334-1559		
Phone:	: (209) 394-7901	Fax:	- -	Phone:	: (209) 394-7901	Fax:	- -
E-Mail:	albert.mulhim@fosterfarms.com			E-Mail:	albert.mulhim@fosterfarms.com		

☒ Competitive Solicitation — Solicitation #: GFO-18-901
☐ First Come First Served Solicitation

1. Exhibit A, Scope of Work		☒ Attached
2. Exhibit B, Budget Detail		☒ Attached
3. CEC 105, Questionnaire for Identifying Conflicts		☒ Attached
4. Recipient Resolution	☒ N/A	☐ Attached
5. CEQA Documentation	☐ N/A	☒ Attached

Agreement Manager	**Date**	**Office Manager**	**Date**	**Deputy Director**	**Date**

Exhibit A
Scope of Work

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR[1]	Task Name
1		General Project Tasks
2	x	Site Preparation And Equipment Procurement
3	x	Equipment Installation
4		Measurement and Verification
5		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
D/A	Deaerator
GHG	Greenhouse Gas
M&V	Measurement and Verification
O_2	Oxygen
VFD	Variable Frequency Drive

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

A. Purpose of Agreement

The purpose of this Agreement is to fund energy efficient upgrades that reduce energy consumption and greenhouse gas (GHG) emissions from food processing facilities. The result of the energy efficient upgrades will be a reduction in energy consumption, in the form of onsite electricity consumption and combustion of natural gas, resulting in the reduction of greenhouse gas and criteria pollutant emissions.

B. Problem/ Solution Statement

Problem

Food processing is an energy intensive process that offers room for technology advancement with energy efficient processes as well as recapture of waste heat. However, the energy solutions present cost barriers. Industrial boilers are made to be durable, which makes them expensive but long lasting. Investing in more efficient boilers is costly, and it is a challenging investment when the existing technology has significant useful life remaining. However, operational cost savings do not make efficiency upgrades less capital intensive. Funding assistance makes the facility improvements affordable, thereby making the environmental improvements obtainable.

[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.

Solution

The Recipient will install a series of efficient components and control programs to reduce energy use and emissions. The Recipient will install boiler economizers, boiler re-controls, and motor speed controls to reduce electricity use. Ammonia refrigeration optimization will be added, which will entail upgrading the controls so that compressors operate on a floating head pressure. The Recipient will install a new deaerator (D/A) tank that will be re-piped. The Recipient will also install a hot water recovery system to recapture waste heat from the cleaning water system used to clean the rendering plant. The installation of the drop-in technologies will help to reduce the GHG emissions, and it will reduce the energy consumption of the food processing facilities and serve as an example for other similar operations. The energy savings will show immediate environmental benefits, and the reduced costs will allow for reinvestment in plant efficiency.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to reduce GHG emissions and energy consumption from the Recipient's food processing facilities. The energy efficient upgrades will reduce fuel use, maintenance costs, and also reduce electricity demand.

Agreement Objectives

The objectives of this Agreement are to:

- Install boiler economizers on units;
- Install boiler controls with variable frequency drive (VFD) and oxygen (O_2) trim;
- Install D/A tank steam heat recovery system;
- Install ammonia refrigeration optimization on refrigeration systems;
- Install hot water recovery system for steam cleaning of processing equipment;
- Demonstrate technical and economic feasibility of efficiency measures on boiler, refrigeration and hot water recovery installations at food processing facilities;
- Develop and implement measurement and verification (M&V) protocols to verify efficiency and emission profile of equipment; and
- Develop and implement public affairs campaign to share information related to project lesson learned and benefits generated.

Exhibit A
Scope of Work

III. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

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

The Recipient shall:

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

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

For products that require a final version only

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

For all products

- Submit all data and documents required as products in accordance with the following:

Instructions for Submitting Electronic Files and Developing Software:

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

  The following describes the accepted formats for electronic data and documents provided to the Energy Commission as products under this Agreement, and establishes the software versions that will be required to review and approve all software products:
  - Data sets will be in MS Access or MS Excel file format (version 2007 or later), or any other format approved by the CAM.
  - 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.

o **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:
  - o Terms and conditions of the Agreement;
  - o Administrative products (subtask 1.1);
  - o CPR meetings (subtask 1.3);
  - o Match fund documentation (subtask 1.6);
  - o Permit documentation (subtask 1.7);
  - o Subcontracts (subtask 1.8); and
  - o Any other relevant topics.

  The technical portion of the meeting will include discussion of the following:
  - o 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); 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, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

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

The Recipient shall:

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

Exhibit A
Scope of Work

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

  The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be divided into two separate meetings at the CAM's discretion.
  - The technical portion of the meeting will involve the presentation of findings, conclusions, and recommended next steps (if any) for the Agreement. The CAM will determine the appropriate meeting participants.
  - The administrative portion of the meeting will involve a discussion with the CAM and the CAO of the following Agreement closeout items:
    - Disposition of any state-owned equipment.
    - Need to file a Uniform Commercial Code Financing Statement (Form UCC-1) regarding the Energy Commission's interest in patented technology.
    - The Energy Commission's request for specific "generated" data (not already provided in Agreement products).
    - 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 quarterly *Progress Report* to the CAM. Each progress report must:
  - Summarize progress made on all Agreement activities as specified in the scope of work for the preceding month, including accomplishments, problems, milestones, products, schedule, fiscal status, and an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. See the Progress Report Format Attachment for the recommended specifications.
- Submit a quarterly *Invoice* that follows the instructions in the "Payment of Funds" section of the terms and conditions, including a financial report on Match Fund and in-state expenditures.

Products:
- Progress Reports
- Invoices

Subtask 1.6 Final Report

The goal of this subtask is to prepare a comprehensive Final Report that describes the original purpose, approach, results, and conclusions of the work performed under this Agreement. The CAM will review the Final Report according to the Project Schedule. When creating the Final Report, the Recipient must use the Style Manual provided by the CAM.

The Recipient shall:
- Prepare a *Final Report* for this Agreement in accordance with the Style Manual, and Final Report Template provided by the CAM with the following considerations:
  - Ensure that the report includes the following items, in the following order:
    - Cover page (required)
    - Credits page on the reverse side of cover with legal disclaimer (required)
    - Acknowledgements page (optional)
    - Table of Contents (required, followed by List of Figures and List of Tables, if needed)

- Executive summary (required) following the Executive Summary Template
- Include a summary table that includes the following information, but is not limited to (required):
  - Recipient name;
  - Project description;
  - Project location(s);
  - Census tract;
  - Dates: project selected and completed;
  - GGRF dollars allocated;
  - Leveraged and/or match funds;
  - Estimated/actual total project GHG emission reductions;
  - Estimated/actual energy saved (kWh, therms, or other fuels) for energy efficiency projects;
  - Estimated/actual energy generated (kWh or therm equivalents) for renewable energy projects;
  - Other benefits or results;
  - Other market sectors that can benefit from the project
  - Benefits to priority populations.
- Appendices - Include a copy of the M&V report for each demonstration site funded by the Energy Commission grant). (required)

o Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.

o Ensure that the document omits subjective comments and opinions. However, recommendations in the conclusion of the report are allowed.

- Submit a draft of the report to the CAM for review and comment according to the project schedule. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt
- Consider incorporating all CAM comments into the Final Report. If the Recipient disagrees with any comment, provide a written response explaining why the comment was not incorporated into the final product
- Submit the revised Final Report and responses to comments within 10 days of notice by the CAM, unless the CAM specifies a longer time period or approves a request for additional time.
- Submit one bound copy of the *Final Report* to the CAM along with *Written Responses to Comments on the Draft Final Report*.

Products:

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

CAM Product:

- Written Comments on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

Subtask 1.7 Match Funds

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

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

The Recipient shall:

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

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

Products:

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

Subtask 1.8 Permits

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

Exhibit A
Scope of Work

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:
  - o 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.
  - o 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.
- 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)*

Exhibit A
Scope of Work

IV. TECHNICAL TASKS

*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. **Subtask 1.1 (Products)** describes the procedure for submitting products to the CAM.*

TASK 2: SITE PREPARATION AND EQUIPMENT PROCUREMENT

The goal of this task is to prepare the site and procure the necessary equipment and materials for this project.

The Recipient Shall:

- Complete the following Subtasks;
  - 2.1 Boiler Economizers
    Procure the necessary equipment and materials for the boiler economizer system. The equipment to be procured includes boiler economizers and condensers for each boiler system. Site preparation will require boiler shutdown and cool down, disconnecting inlet connection, and removing retaining bolts on top of the boiler. Provide final equipment and performance specifications to the installation contractor for final bids. The installation contractor will procure the equipment as well as complete site preparation.

  - 2.2 Boiler Controls and Oxygen Trim
    Procure the necessary equipment and materials for the boiler control enhancement with an oxygen (O2) trim system. Site preparation will require removal of existing combustion system and flame safeguard controls. Provide final equipment and performance specifications to the installation contractor for final bids. The installation contractor will procure the equipment as well as complete site preparation.

  - 2.3 Boiler #6 D/A Tank Replacement and Re-Piping
    Procure the necessary equipment and materials for the D/A tank replacement and re-piping. The equipment to be procured includes a new high pressure D/A tank, piping to re-pipe from current location to new D/A tank, and an electrical and control system. Site preparation will require removal of an existing 3-way valve above the Flume Stack. Provide final equipment and performance specifications to the installation contractor for final bids. The installation contractor will procure the equipment as well as complete site preparation.

  - 2.4 Refrigeration and Energy Management System
    Procure the necessary equipment and materials for the refrigeration energy management system. The equipment to be procured includes Variable Frequency Drives (VFDs), compressor panels, new compressors, and ethernet communication wiring. Provide final equipment and performance specifications to the installation contractor for final bids. The installation contractor will procure the equipment as well as complete site preparation.

  - 2.5 Hot Water Recovery System
    Procure the necessary equipment and materials for the hot water recovery system. The equipment to be procured includes new hot water holding tanks, new pumps, new heat exchangers, and water softener. It also includes all piping and electrical costs. Site preparation will require removal or relocation of existing pumps, piping, heat

exchangers, tanks, structural steel, and concrete at the existing plant. Provide final equipment and performance specifications to the installation contractor for final bids. The installation contractor will procure the equipment as well as complete site preparation.

- For all subtasks in Task 2:
  - Secure final installation quotes.
  - Secure project development schedule from installation contractor and all related subcontractors.
  - Order equipment and supplies for installation of equipment.
  - Make plans and preparations for staggered installation to allow staged installation without ceasing all operations.
  - Prepare safety plans for the shut down and equipment installation.

- Provide a comprehensive *Site Preparation and Equipment Procurement Memo* that shall include, but not be limited to:
  - Summary of the steps necessary to prepare the site(s) for all equipment installations, including which equipment will be installed at each site;
  - Copy of the equipment and performance specifications for each equipment purchased by the grant
  - Summary of the bids received and from whom;
  - Copies of the purchase orders for equipment to be procured;
  - Safety plans for the shut down and equipment installation
  - Status of the planned installation including preliminary schedule for equipment delivery and installation for each site.

- Prepare *CPR Report #1* and participate in a CPR Meeting.

Products:
- Site Preparation and Equipment Procurement Memo (draft and final)
- CPR Report #1

TASK 3: EQUIPMENT INSTALLATION
The goal of this task is to install the necessary equipment for this project.

Subtask 3.1 Boiler Economizers
The goal of this task is to install the necessary equipment for the boiler economizer system. The equipment to be installed includes boiler economizers and condensers for each boiler system.

The Recipient shall:
- Commence plans for safe shut down and modifications and allow for staggered installation.
- Install flue gas recapture system according to the required specifications.
- Follow safety plans for equipment shutdown prior to installation.
- Install economizers and condensers.
- Start-up and commission equipment and make adjustments as needed to meet stated performance specification.

- Provide a *Subtask 3.1 Equipment Installation Memo* that shall include, but not be limited to:
  - Summary of the equipment installation requirements for each demonstration site;
  - Identification of barriers involved during installation and discuss the steps taken to overcome those barriers; and
  - Discuss results of equipment start-up and commissioning at each site with respect to whether the equipment as installed meets the stated performance specifications.

Products:
- Subtask 3.1 Equipment Installation Memo

Subtask 3.2 Boiler Controls and Oxygen Trim
The goal of this task is to install the necessary equipment for the boiler controls and O_2 trim. The equipment to be installed includes the parallel position controller, infrared scanner, amplifier card for infrared scanner, Modbus servo-motors, VFD Expansion card, O_2 probe assembly, conductor cable for servo-motors & O_2, probe, steam pressure sensor, LCD display, drives for combustion air fan mounted in a control panel, and touch screen display.

The Recipient shall:
- Install the equipment described under Subtask 3.2.
- Start-up and commission equipment and make adjustments as needed to meet stated performance specification.
- Provide a *Subtask 3.2 Equipment Installation Memo* that shall include, but not be limited to:
  - Summary of the equipment installation requirements for each demonstration site;
  - Identification of barriers involved during installation and discuss the steps taken to overcome those barriers; and
  - Discuss results of equipment start-up and commissioning at each site with respect to whether the equipment as installed meets the stated performance specifications.

Products:
- Subtask 3.2 Equipment Installation Memo

Subtask 3.3 Boiler #6 D/A Tank Replacement and Re-Piping
The goal of this task is to install the necessary equipment for the D/A tank replacement and re-piping. The equipment to be installed includes a new high pressure D/A tank, piping to re-pipe from current location to new D/A tank, and an electrical control system.

The Recipient shall:
- Install new High Pressure Boiler D/A tank.
- Segregate the two different steam pressure systems & conductivity blowdown to eliminate the continuous discharge of high temperature condensate plume of steam.
- Start-up and commission equipment and make adjustments as needed to meet stated performance specification.
- Provide a *Subtask 3.3 Equipment Installation Memo* that shall include, but not be limited to:
  - Summary of the equipment installation requirements for each demonstration site;
  - Identification of barriers involved during installation and discuss the steps taken to overcome those barriers; and

- Discuss results of equipment start-up and commissioning at each site with respect to whether the equipment as installed meets the stated performance specifications.

Products:

- Subtask 3.3 Equipment Installation Memo

Subtask 3.4 Refrigeration and Energy Management System

The goal of this task is to install the necessary equipment for the refrigeration and energy management system. The equipment to be installed includes VFDs, compressor panels, new compressors, and ethernet communication wiring.

The Recipient shall:

- Upgrade all current refrigeration control systems to have the capability to control condenser VFDs based off floating head design and sequence the compressors at each plant to make them run the most efficient for energy usage.
- Install new ethernet communication from all new compressor panels back to refrigeration control systems.
- Program all upgraded refrigeration control systems to run a floating head condenser control scheme.
- Program all upgraded refrigeration control systems to sequence compressors for optimum efficiency.
- Start-up and commission equipment and make adjustments as needed to meet stated performance specification.
- Prepare *CPR Report #2* and participate in a CPR Meeting.
- Provide a *Subtask 3.4 Equipment Installation Memo* that shall include, but not be limited to:
  - Summary of the equipment installation requirements for each demonstration site;
  - Identification of barriers involved during installation and discuss the steps taken to overcome those barriers; and
  - Discuss results of equipment start-up and commissioning at each site with respect to whether the equipment as installed meets the stated performance specifications.

Products:

- Subtask 3.4 Equipment Installation Memo
  CPR Report #2

Subtask 3.5 Hot Water Recovery System

The goal of this task is to install the necessary equipment to recover waste heat from the hot water system in the rendering plant. The equipment to be installed includes new hot water holding tanks, new pumps, new heat exchangers, and water softener.

The Recipient shall:

- Install hot water recovery system, piping, controls, and associated equipment as described under subtask 3.5.
- Start-up and commission equipment and make adjustments as needed to meet stated performance specification.
- Provide a *Subtask 3.5 Equipment Installation Memo* that shall include, but not be limited to:
  - Summary of the equipment installation requirements for each demonstration site;

- Identification of barriers involved during installation for each site and discuss the steps taken to overcome those barriers; and
- Discussion of results of equipment start-up and commissioning for site with respect to whether the equipment as installed meets the stated performance specifications.

Products:

- Subtask 3.5 Equipment Installation Memo

TASK 4: MEASUREMENT AND VERIFICATION

The goal of this task is to report the benefits resulting from this project. Project team will use a third party vendor for measurement and verification (M&V) of GHG emissions and energy consumption reductions.

The Recipient shall:

- Enter into agreement with M&V subcontractor per Task 1.9 (if using outside vendor).
- Coordinate site visits with the M&V subcontractor at each demonstration site.
- Develop M&V protocol for *pre-installation* measurement (or calculation) following Section II.B.2 of the grant solicitation manual:
  - Electric, natural gas and/or other fossil fuel consumption and greenhouse gas emissions (use appropriate emissions factor from Attachment 8 of the grant solicitation) of the equipment/process/system(s)/sub-system(s) that are to be upgraded and/or replaced and/or modified.
  - If necessary, ensure installation of sub-metering equipment and data loggers for pre/post data analysis.
- Prepare and provide a detailed *Measurement and Verification Plan* for each project demonstration site to include but not be limited to:
  - A description of the monitoring equipment and instrumentation which will be used.
  - A description of the key input parameters and output metrics which will be measured.
  - A description of the M&V protocol and analysis methods to be employed.
  - A description of the independent, third-party measurement and verification services to be employed, if applicable.
- Perform three months (or shorter period as approved in writing by the CAM) of pre-installation measurements (and calculations) based on the M&V protocol for pre-install
- Prepare and provide a *Pre-Installation M&V Findings Report* for each demonstration site that includes M&V protocol, pre-install measurements (and calculations), analysis, and results performed in this task.
- Develop M&V protocol for *post-installation* measurements (and calculations) of:
  - Electric, natural gas and/or other fossil fuel consumption and greenhouse gas emissions (use appropriate emissions factor from Attachment 8 of the grant solicitation) of the equipment/process/system(s)/sub-system(s) that will be upgraded and/or replaced and/or modified
- Perform 12 months or two seasons, for seasonal facilities, (or shorter period as approved in writing by the CAM) of post-installation measurements based on M&V protocol for post-installation.
- Provide a summary of post-installation M&V progress in Progress Report(s) (see subtask 1.5) which shall include but not be limited to:
  - A narrative on operational highlights from the reporting period, including any stoppages in operation and why;
  - A summary of M&V findings from the reporting period.

- Analyze post-installation electrical, natural gas and/or other fossil fuel consumption and greenhouse gas emissions.
- Prepare and provide a *Post-Installation Measurement and Verification Findings Report* for each demonstration site that includes M&V protocol, pre and post install measurements (or calculations), analysis, and results performed in this task.
  Results should at a minimum report on the reduction of electricity, natural gas and/or other fossil fuel usage and reductions of greenhouse gas emissions that directly result from this project.
  - Provide all key assumptions used to estimate and determine energy and greenhouse gas reductions (and additions, if applicable).
  - 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.

Products:
- Measurement and Verification Plan (draft and final)
- Pre-Installation Measurement and Verification Findings Report (draft and final)
- Post-Installation Measurement and Verification Findings Report (draft and final)

TASK 5: TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES
The goal of this task is to make the knowledge gained, project results, and lessons learned available to the public and key decision makers.

The Recipient shall:
- When directed by the CAM, develop Presentation Materials for an Energy Commission-sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in workshops symposium(s) sponsored by the California Energy Commission.
- Provide at least six (6) High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project site or related project photographs.

Products:
- Presentation Materials (draft and final)
- High Quality Digital Photographs

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

RESOLUTION NO: 2019-0220-9h

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: FOSTER POULTRY FARMS

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

RESOLVED, that the Energy Commission approves Agreement FPI-18-003 with Foster Poultry Farms for a $2,666,652 grant to fund energy efficient upgrades, including heat recovery systems and controls, at the recipient's five existing food processing facilities, and adopting staff's determination that this action is exempt from the California Environmental Quality Act. The project will replace existing conventional, aging equipment with high-efficiency equipment to reduce greenhouse gas emissions, energy use, and operating costs; 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 February 20, 2019.

AYE: [List of Commissioners]
NAY: [List of Commissioners]
ABSENT: [List of Commissioners]
ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat