

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

A) New Agreement 500-17-003 (To be completed by CGL Office)

ERDD	Cyrus Ghandi	51	916-327-1506
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San Francisco State University	93-1137247
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Technical Assistance for the Energy Commission Food Processing Program
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3/1/2018	12/31/2020	\$ 249,947
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<input type="checkbox"/> Operational agreement (see CAM Manual for list) to be approved by Executive Director			
<input type="checkbox"/> ARFVTP agreements under \$75K delegated to Executive Director.			
Proposed Business Meeting Date	1/17/2018	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Cyrus Ghandi	Time Needed:	5 minutes

Please select one list serve. NaturalGas (NG Research Program)

Agenda Item Subject and Description

SAN FRANCISCO STATE UNIVERSITY. Proposed resolution approving Agreement 500-17-003 with San Francisco State University for a \$249,947 contract to identify and recommend market-ready and advanced energy technologies that will reduce energy costs, increase efficiency, and reduce greenhouse gas emissions and other pollutants for California's food processing industry. (Natural Gas funding) Contact: Cyrus Ghandi (Staff presentation: 5 minutes)

1. Is Agreement considered a "Project" under CEQA? <input checked="" type="checkbox"/> Yes (skip to question 2) <input type="checkbox"/> 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: <input checked="" type="checkbox"/> a) Agreement IS exempt. (Attach draft NOE) <input type="checkbox"/> Statutory Exemption. List PRC and/or CCR section number: _____ <input checked="" type="checkbox"/> Categorical Exemption. List CCR section number: <u>Cal. Code Regs., tit. 14, §15306</u> <input type="checkbox"/> Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section: Cal. Code Regs, tit. 14, sec. 15306 provides that projects which consist of basic data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from the provisions of CEQA. This project involves information gathering and analysis of advanced energy technologies that are used in California's food processing industry. This project does not involve any construction, installation of equipment, or demonstration activities. This project does involve site visits to food processing plants to evaluate food processing technologies. These site visits will be solely for data gathering and measurement and verification activities. Therefore, this project falls within section 15306 and will not have a significant effect on the environment.	
<input type="checkbox"/> b) Agreement IS NOT exempt. (Consult with the legal office to determine next steps.) Check all that apply <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Initial Study <input type="checkbox"/> Negative Declaration <input type="checkbox"/> Mitigated Negative Declaration </div> <div> <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Statement of Overriding Considerations </div> </div>	

Legal Company Name:	Budget	SB	MB	DVBE
	\$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legal Company Name:

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Funding Source	Funding Year of Appropriation	Budget List No.	Amount
NG Subaccount, PIERDD	16-17	501.001K	\$249,947
			\$
R&D Program Area: EERO: IAW			\$
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	
Name: Rowena Manalo			
Address: 1600 Holloway Ave			
City, State, Zip: San Francisco, CA 94132-1722			
Phone: 415-405-2685 / Fax: - -			
E-Mail: mamaradL@sfsu.edu			
Name: Ahmad Ganji			
Address: 1600 Holloway Ave			
City, State, Zip: San Francisco, CA 94132-1722			
Phone: 415-338-7736 / Fax: - -			
E-Mail: aganji@sfsu.edu			

☐ Solicitation Select Type Solicitation #: _____ # of Bids: _____ Low Bid? ☐ No ☐ Yes
☐ Non Competitive Bid (Attach CEC 96)
☒ Exempt Interagency

☐ Private Company (including non-profits)
☒ CA State Agency (including UC and CSU)
☐ Government Entity (i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state)

If yes, check appropriate box: ☒ No ☐ Yes
☐ SB ☐ MB ☐ DVBE

☒ Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)
☐ Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER)
☐ The Services Contracted:
☐ are not available within civil service
☐ cannot be performed satisfactorily by civil service employees
☐ are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system.
☐ The Services are of such an:
☐ urgent
☐ temporary, or
☐ occasional nature
 that the delay to implement under civil service would frustrate their very purpose.
Justification:

☒ A. Reimbursement in arrears based on:
☒ Itemized Monthly ☐ Itemized Quarterly ☐ Flat Rate ☐ One-time
☐ B. Advanced Payment
☐ C. Other, explain:

1. Is Agreement subject to retention? ☒ No ☐ Yes
 If Yes, Will retention be released prior to Agreement termination? ☐ No ☐ Yes

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Rates are predetermined for the California State University employees involved in this project, through existing approved University policies. The rates are consistent with normal costs associated with conducting this type of research.

1. ☒ Exempt (Interagency/Other Government Entity)
2. ☐ Meets DVBE Requirements DVBE Amount:\$ _____ DVBE %: _____
 - ☐ Contractor is Certified DVBE
 - ☐ Contractor is Subcontracting with a DVBE: _____
3. ☐ Contractor selected through CMAS or MSA with no DVBE participation.
4. ☐ Requesting DVBE Exemption (attach CEC 95)

1. Will there be Work Authorizations? ☒ No ☐ Yes
2. Is the Contractor providing confidential information? ☒ No ☐ Yes
3. Is the Contractor going to purchase equipment? ☒ No ☐ Yes
4. Check frequency of progress reports
☒ Monthly ☐ Quarterly ☐ _____
5. Will a final report be required? ☐ No ☒ Yes
6. Is the agreement, with amendments, longer than a year? If yes, why? ☐ No ☒ Yes

The Department of General Services has agreed to give the Commission blanket authority to execute multi-year contracts to support the Commission's RD&D Programs.

- | | | |
|---|---|--|
| 1. Exhibit A, Scope of Work | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 3. CEC 96, NCB Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 4. CEC 30, Survey of Prior Work | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEC 95, DVBE Exemption Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 6. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 7. Resumes | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 8. CEC 105, Questionnaire for Identifying Conflicts | | <input checked="" type="checkbox"/> Attached |

Agreement Manager_____
Date_____
Office Manager_____
Date_____
Deputy Director_____
Date

Exhibit A SCOPE OF WORK

I. TASK AND ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		Administrative Tasks
2		Current State of California Food Processing Industry
3		Analysis of Potential Technologies for California's Food Processing Industry
4	X	Calculator for Determining Energy Savings and Greenhouse Gas Reductions from Energy Opportunities
5		Technical Support and Assistance
6		Evaluation of Project Benefits

B. Acronym/Term List

Specific acronyms and terms used throughout this scope of work are listed below:

Word/Term	Definition
Advanced Energy Technologies	These are commercially available technologies with limited demonstration in California but have potential for mid and long term natural gas savings and GHG reductions.
CAM	Commission Agreement Manager, the person designated by the Energy Commission to oversee the performance of an agreement resulting from this contract and to serve as the main point of contact for the Contractor.
CARB	California Air Resources Board
Candidate Project	Project identified by the Contractor that will be considered for inclusion in the deliverables for Task 3.
Common Operations and Processes	Common Operations and Processes are those that reduce natural gas use including, but are not limited to: heating and drying (direct and indirect), cooling and refrigeration, boilers, furnaces, and sterilization.
Contractor	The entity who will perform the tasks specified in this Scope of Work under the direction of the CAM.
Energy Commission	California Energy Commission
Food Processors	Includes those who transform raw ingredients, by physical or chemical means into marketable food products. Examples include: canners, freezers, dryers, dehydrators, dairy processors, snack food makers, juice and other beverages, sauces, oils, bakeries and specialty food products.
GHG	Greenhouse Gas
IOU	Investor-Owned Utility, including Pacific Gas and Electric Co., San Diego Gas and Electric Co., Southern California Edison Co., and Southern California Gas
Market-ready Energy Technologies	Includes technologies that are commercially available and have proven to reduce natural gas use, such as energy efficiency, waste heat recovery, boiler and steam system optimization, and co-generation.

¹ Please see subtask 1.3 in Part III of the Scope of Work (Project Administration) for a description of Critical Project Review (CPR) Meetings.

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SCOPE OF WORK

Pain Points	Barriers to adoption of market-ready energy technologies.
Short term, Mid-term and Long Term	<ul style="list-style-type: none">○ Short term means technologies can be implemented immediately○ Mid-term means an advanced technology with potential for widespread adoption after 2030 due to resolution of technical/economic barriers○ Long term means an advanced technology with potential for widespread adoption after 2040 due to resolution of technical/economic barriers

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

A. Purpose

The purpose of this agreement is to: identify and recommend market-ready and advanced energy technologies that will reduce energy costs, increase efficiency, and reduce greenhouse gas (GHG) emissions and other pollutants for California's food processing industry. The focus should include technologies that could be implemented immediately (2018-2020) and those that have potential for implementation in a longer timeframe, such as by 2030 and beyond. Additionally, the recommendations resulting from this agreement hope to: mitigate pain points faced by California's food processing industry; and improve common operations and processes to maintain their industrial competitiveness in California. Lessons learned during this process will also inform future Energy Commission solicitations related to energy technology upgrades targeted at California's food processing industry.

B. Problem/ Solution Statement

Problem

The California food processing industry has experienced increased costs for labor, energy, and transportation over time and faces competition from out-of-state businesses. They also must reduce GHG emissions and other pollutants to meet California's environmental regulatory requirements. The industry generally has small profit margins, short processing seasons, and is limited in its ability to pass the costs of regulatory programs through to customers. The seasonal nature of production enhances these challenges. Although some energy utility incentive programs exist, equipment is expensive and the economics may be poor, especially for seasonal food processing operations. However, there is need to find technological solutions for reducing GHG emissions to maintain the food processing industries competitiveness in California.

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Solution

The deliverables resulting from this agreement will recommend market-ready and advanced, natural gas energy saving technologies for the California food processing industry to adopt immediately and in the longer time frame that will:

- Meet the industry's energy needs to reduce energy costs, increase efficiency, reduce GHG emissions and other pollutants;
- Mitigate pain points faced by California's food processing industry; and
- Enable the industry to meet its business needs for common operations and processes.

C. Goals and Objectives

Goals

The goal of this interagency agreement is to provide expertise on the food processing industry to recommend natural gas energy technology upgrades, especially to those industries listed in the Cap-and-Trade Program, Vintage 2017 Allowance Allocation (<https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/v2017allocation.pdf>) that will:

- Address the pain points faced by the industry, and the energy and GHG reduction needs of the industry; and
- Assess technologies that meet the industry's needs to develop an actionable California food processor energy technology roadmap to support the industry's near and long term adaptation to increase efficiency and reduce GHG emissions.

Objectives

The objectives of this interagency agreement are to:

- Identify the most energy-intensive operations and processes involving natural gas usage within California's food processing industry, especially those food processing industries listed in the Goals section.
- Identify natural gas energy-related pain points faced by California's food processing industry in the common business operations and processes.
- Conduct onsite system energy assessments to identify market-ready and advanced energy technologies for the California food processing industry—considering energy savings, cost effectiveness, technical feasibility, and GHG reductions—especially for those food processing industries listed in the Goals section and that can be implemented in the near, mid, and long term.
- Develop an analysis and report on energy savings from the technologies with the greatest potential for natural gas savings, GHG (and criteria/toxic) emissions reductions in the short to long term and recommendations for overcoming barriers to implementation. The technologies should include those that have the most impact to reduce energy costs, increase efficiency, reduce GHG emissions and other pollutants, and enable the industry to meet its business needs and competitiveness in California.
- Inform the Energy Commission on gaps to be addressed in future research programs.

ADMINISTRATIVE TASK

III. TASK 1 MANAGEMENT

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DELIVERABLES

Subtask 1.1 Deliverables

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

The Contractor shall:

For deliverables that require a draft version

- Submit all draft deliverables to the CAM for review and comment in accordance with the Project Schedule (Part V). The CAM will provide written comments to the Contractor on the draft deliverable within 15 days of receipt, unless otherwise specified in the task/subtask for which the deliverable is required.
- Submit the final deliverable to the CAM once agreement has been reached on the draft. The CAM will provide written approval of the final deliverable within 15 days of receipt, unless otherwise specified in the task/subtask for which the deliverable is required.
- If the CAM determines that the final deliverable does not sufficiently incorporate his/her comments, submit the revised deliverable to the CAM within 10 days of notice by the CAM, unless the CAM specifies a longer time period.

For deliverables that require a final version only

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

For all deliverables

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

Software:

○ **Electronic File Format**

Submit all data and documents required as deliverables 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 data and documents in a format specified by the CAM, such as memory stick or CD-ROM.

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

- 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 Contractor 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) - Recommend 7.5 (version 6 and up).
- Visual Studio.NET (version 2008 and up). Recommend 2010.
- C# Programming Language with Presentation (UI), Business Object and Data Layers.
- Structured Query Language (SQL).
- 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.

Exhibit A SCOPE OF WORK

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 Contractor shall:

- Attend a “Kick-off” meeting with the CAM, and other individuals selected by the CAM to attend this meeting. The Contractor 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:

- Administrative deliverables (subtask 1.1);
- CPR meetings (subtask 1.3);
- Permit documentation (subtask 1.7); *(if applicable)*; 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; *(if applicable)*
 - Technical deliverables (subtask 1.1);
 - Progress reports and invoices (subtask 1.5);
 - Final Report (subtask 1.6); *(if applicable)*
 - Any other relevant topics.
- Provide an *Updated Project Schedule* 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 Contractor a *Kick-off Meeting Agenda*.

Contractor Deliverables:

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

PM Deliverable:

- Kick-off Meeting Agenda

Subtask 1.3 Critical Project Review (CPR) Meetings

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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, deliverables, schedule, or budget. CPR meetings provide the opportunity for frank discussions between the Energy Commission and the Contractor. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Contractor, and may include the Commission Agreement Officer 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 Contractor, 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 Contractor 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 Deliverables* 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 deliverables 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 Contractor's input.
- Send the Contractor 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 permits.
- Conduct and make a record of each CPR meeting. Provide the Contractor 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, deliverables, 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 Contractor with a *Progress Determination* on continuation of the project, in accordance with the schedule. The Progress Determination may include a requirement that the Contractor revise one or more deliverables.

Contractor Deliverables:

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

CAM Deliverables:

- 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 for this agreement.

The Contractor 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. The Contractor will bring its Project Manager and any other individuals designated by the CAM to this meeting. The meeting may occur in person or by electronic conferencing (e.g., WebEx), with approval of the CAM.
 - The technical and administrative aspects of the 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 Contractor and CAM, and may include the CAM, in a discussion of the following 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 deliverables).
 - Need to document the Contractor's disclosure of "subject inventions" developed under the agreement.
 - "Surviving" agreement provisions such as repayment provisions and confidential deliverables. *(If applicable)*
 - Final invoicing and release of retention.
- Prepare a *Final Meeting Agreement Summary* that documents any agreement made between the Contractor and Commission staff during the meeting.
- Prepare a *Schedule for Completing Closeout Activities*.
- Provide *All Draft and Final Written Deliverables* on a CD-ROM or USB memory stick, organized by the tasks in the agreement.

Deliverables:

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

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 objectives of this Agreement; and (2) ensure that invoices contain all required information and are submitted in the appropriate format.

The Contractor shall:

- Submit a *Monthly Progress Report* to the CAM. Each progress report must:
 - Summarize all Agreement activities conducted by the Contractor 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 or format as specified by the CAM and CAM.
 - Provide a synopsis of the project progress, including accomplishments, problems, milestones, deliverables, schedule, fiscal status, and any evidence of progress such as photographs.
 - Each monthly progress report is due within 10 working days after the first of each month. Progress reports will be submitted with each Monthly invoice.
- Submit a *Monthly Invoice* that follows the instructions in the “Payment of Funds” section of the terms and conditions.
 - Monthly invoices include all reimbursable expenses incurred performing work under this Agreement, including any required *Invoice Backup Documentation*, in compliance with the terms and conditions of this Agreement.
 - The invoice format and content shall be specified by the CAM. In addition, an Account Summary sheet of Agreement activities as specified by the CAM will be attached to the invoice.
 - Each monthly invoice is due within 10 working days after the first of each month. Invoices will be submitted with each *Monthly Progress Report*.
 - Invoices must be submitted to the Energy Commission’s Accounting Office.

Deliverables:

- Monthly Progress Reports
- Monthly Invoices
- Invoice Backup Documentation

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. 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,

Exhibit A SCOPE OF WORK

the Contractor must use a Style Manual provided by the CAM. The CAM will determine the style and content requirements of the Final Report.

Subtask 1.6.1 Final Report Outline

The Contractor shall:

- Prepare a *Final Report Outline* in accordance with the *Style Manual* or other format approved 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.

Contractor Deliverables:

- Final Report Outline (draft and final)

CAM Deliverable:

- Style Manual

Subtask 1.6.2 Final Report

The Contractor shall:

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

Deliverables:

- Final Report (draft and final)

PERMITS

Subtask 1.7 Permits (*if applicable*)

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 reimbursable under this agreement. Permits must be identified and obtained before the Contractor may incur any costs related to the use of the permit(s) for which the Contractor will request reimbursement.

The Contractor shall:

- Prepare a *Permit Status Letter* that documents the permits required to conduct this agreement. If no permits are required, then state this in the letter. If permits will be required during the course of the agreement, provide in the letter:

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- 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 Contractor 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.

Deliverables:

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

Exhibit A SCOPE OF WORK

IV. TECHNICAL TASKS

*Deliverables that require a draft version are indicated by marking “(draft and final)” after the deliverable name in the “Deliverables” section of the task/subtask. If “(draft and final)” does not appear after the deliverable name, only a final version of the deliverable is required. **Subtask 1.1 (Deliverables)** describes the procedure for submitting deliverables to the CAM.*

TASK 2: CURRENT STATE OF CALIFORNIA FOOD PROCESSING INDUSTRY

The goal of this task is to document the current state of the California Food Processing industry’s most pressing natural gas saving needs, and pain points that prevent adoption of energy technology upgrades.

The Contractor shall:

- Develop a *Memo Summarizing the California Food Processing Industry’s Natural Gas Saving Needs and Barriers* by:
 - Using existing secondary data to identify major food processing industries in California, annual natural gas energy use, major equipment, estimated life of equipment and criteria for those with most potential to retrofit, with emphasis on those food processing industries listed in the Cap-and-Trade Program, Vintage 2017 Allowance Allocation (see Goals).
 - Using existing, public secondary data to document:
 - What is the return on their investment required for any energy technology upgrades?
 - What are common energy pain points and barriers faced by the food processing industry when making energy upgrade purchases and decisions?
 - What common operations and processes should be targeted that have most potential for meeting the goals and objectives of the Agreement and why?
 - What are other considerations, when replacing equipment?
 - Which of the following value propositions seem to have influence in California for deploying market-ready and advanced energy technologies, indicating value rankings of:
 - Reliability
 - Reduction in energy costs
 - Reduction in GHG emissions and other air emissions
 - Energy generation (e.g., combined heat and power-CHP)
 - Reduction in operation costs (e.g., labor and equipment)
 - Quality of food products produced
 - Other services beyond natural gas (i.e. water quality, wastewater discharge, etc.)

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Deliverables:

- Memo Summarizing California Food Industry's Energy Needs and Barriers

TASK 3: ANALYSIS OF POTENTIAL TECHNOLOGIES FOR CALIFORNIA'S FOOD PROCESSING INDUSTRY

The goal of this task is to identify market-ready and advanced, natural gas saving technologies that can be used by the California food processing industry to meet their energy and business needs.

The Contractor shall:

- Develop an analysis of potential natural gas saving technologies to maximize efficiency and GHG emissions for the California Food Processing Industry which will include, but not be limited to:
 - Screen and list market-ready and advanced energy technologies with most potential for implementation in the near, mid and long term.
 - Categorize and identify up to 20 candidate projects/technologies (or an alternate number as determined by the CAM) that have the most potential for natural gas energy use reductions, and/or GHG emission reductions and indicate time horizon (near, mid and long term), technical and economic potential (high, medium or low), estimated percent GHG emission reductions for each candidate project/technology compared to standard equipment in the following areas:
 - Heating and drying (direct and indirect)
 - Cooling and refrigeration (non-vapor compression)
 - Boilers, economizers, evaporators and furnaces
 - Steam-driven (natural gas driven) motors, fans, pumps, machine drives and product-handling equipment
 - Heating, ventilation, and air conditioning (non-vapor compression)
 - Waste heat recovery
 - Other areas with potential for natural gas savings and GHG reductions
 - Develop a *Report on Energy Technologies with Most Potential for the Food Processing Industry* which will categorize and identify candidate projects/technologies that have the most potential for natural gas reductions, and/or GHG emission reductions in the near, mid and long term and include, but not be limited, to the areas listed above.
 - Prepare an *Excel Spreadsheet Table* of the technologies with the greatest potential for natural gas savings, GHG (and criteria/toxic) emissions reductions in the short to long term and characterize the technology, according to, but not limited to, the following information:
 - Description
 - Common application
 - Estimated annual energy savings/or energy produced (electric and thermal)

Exhibit A SCOPE OF WORK

- Estimated percent GHG emission reductions versus total GHG emissions currently emitted
- Estimated measure life
- Cost to implement
- Estimated life cycle savings and costs when compared to typical systems in existing food processing facilities (e.g., return on investment (ROI))
- Barriers or challenges to implementation
- Recommended strategies for implementation and overcoming barriers to implementation
- Ancillary benefits
- Solution Time Frame (near, mid and long term)
- Overall technical potential (low, medium, high)

Deliverables:

- Report on Energy Technologies with the Most Potential for the Food Processing Industry (draft and final)
- Excel Spreadsheet Table

TASK 4: CALCULATOR FOR DETERMINING ENERGY SAVINGS AND GREENHOUSE GAS REDUCTIONS FROM ENERGY OPPORTUNITIES

The goal of this task is to develop a metric to help the industry and stakeholders estimate the magnitude of annual natural gas savings and GHG and other emission reductions which would result from implementation of the advanced energy technologies analyzed in Task 3. This information will assist food processors to identify the most impactful energy technologies and to estimate associated energy savings and GHG reductions.

The Contractor shall:

- Develop an *Excel Workbook to Calculate Energy Savings and GHG Reductions for the Food Processing Industry*. This workbook will be developed with input from the CAM and stakeholders to ensure that the information can be used to accurately document energy savings and GHG emission reductions. The stakeholders must be approved in writing by the CAM. The workbook will include an instructions tab to explain how to use the workbook.
 - Using information obtained in Tasks 2 and 3, as well as other public documents (such as the CPUC's Energy Efficiency Potential Study); the Excel Workbook spreadsheet will enable industry members and stakeholders to plug in information about their own current equipment to estimate baseline energy use and GHG emissions from current equipment-using emission and conversion factors provided by CARB's Greenhouse Gas Reduction Program.
 - The workbook will focus on up to 20 (or an alternate number as determined by the CAM) high potential opportunities (including those examined in Task 3)
 - Determine potential energy and cost savings and GHG emissions for the technologies identified in Task 3. The focus is targeting the most

Exhibit A

SCOPE OF WORK

impactful projects based on energy and cost savings, and GHG reductions. Document and reference the sources of all baseline and replacement technology information and assumptions in an *Energy Assumptions Report*.

- Develop a *Standardized Assessment Report Format* which contains the information necessary to support data requirements for the workbook. This report format may be modeled after the one used by the United States Department of Energy's Advanced Manufacturing Office for its industrial plant energy assessments.
- Prepare a *CPR Report* and participate in a CPR meeting, per Subtask 1.3.

Deliverables:

- Energy Assumptions Report
- Standardized Report Assessment Format
- Excel Workbook to Calculate Energy Savings and GHG Reductions for the Food Processing Industry
- CPR Report

TASK 5: TECHNICAL SUPPORT AND ASSISTANCE

The goal of this task is to provide assistance to the food processing program in the following areas: (1) technical review and cost evaluation of project proposals; (2) public workshop/meeting support; and (3) measurement and verification (M&V) of natural gas energy savings and GHG emission reductions.

The Contractor shall:

- When directed by the CAM:
 - Prepare and provide written *Technical Reviews of Proposals* to evaluate technical and economic feasibility of project proposals submitted to the Energy Commission for the food processing program using the Excel workbook developed in Task 4.
 - Attend or participate in food processing program meetings or discussions in-person or via WebEx or conference call, as determined by the CAM.
 - Document an M&V plan for verifying installation and determining energy saving for selected food processing projects. The CAM shall, in writing, select the projects for M&V activities. This can include a combination of on- and off-site data gathering and evaluation to prepare *M&V Memo*, documenting results of M&V activities.
 - Provide follow-up assistance on identifying industry specific technologies, and/or documenting energy savings and GHG reductions for other projects not listed in this and previous tasks. Document follow-up assistance and outcomes in the Monthly Progress Report prepared under Subtask 1.5.

Deliverables:

- Technical Reviews of Proposals

Exhibit A SCOPE OF WORK

- M&V Memo

TASK 6: EVALUATION OF PROJECT BENEFITS

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

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

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

Deliverables:

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

V. Project Schedule

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: SAN FRANCISCO STATE UNIVERSITY

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 500-17-003 with San Francisco State University for a \$249,947 contract to identify and recommend market-ready and advanced energy technologies that will reduce energy costs, increase efficiency, and reduce greenhouse gas emissions and other pollutants for California's food processing industry; 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 January 17, 2018.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat