

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

New Agreement FPI-18-002 (To be completed by CGL Office)

ERDD	Kevin Uy	43	916-327-1533
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Land O'Lakes, Inc.	41-0365145
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Demonstrating a High Temperature Solar Thermal System at the Land O'Lakes Dairy Processing Facility

3/1/2019	3/30/2023	\$ 2,842,368
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Business Meeting Information☐ ARFVTP agreements under \$75K delegated to Executive Director.Proposed Business Meeting Date 2/20/2019 ☐ Consent ☒ DiscussionBusiness Meeting Presenter Kevin Uy Time Needed: 5 minutes

Please select one list serve. Research (Energy RD&D / PIER program)

Agenda Item Subject and Description

LAND O'LAKES, INC. Proposed resolution approving Agreement FPI-18-002 with Land O'Lakes, Inc. for a \$2,842,368 grant to design, install, and operate a high-temperature solar thermal energy system at the recipient's dairy processing facility in Tulare, California, and adopting staff's determination that this action is exempt from the California Environmental Quality Act. This system will convert solar energy into supplemental heat for thermal processes resulting in reduced natural gas consumption and greenhouse gas emissions.

1. Is Agreement considered a "Project" under CEQA?

☒ Yes (skip to question 2)☐ No (complete the following (PRC 21065 and 14 CCR 15378)):

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 ; Cal. Code Regs., tit 14, § 15303 ; Cal. Code Regs., tit 14, § 15304☐ Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:

This project will install a solar thermal energy system at the Land O'Lakes dairy processing facility in Tulare, CA.

This project will involve minor alteration of existing mechanical equipment at an existing food processing facility and will result in negligible or no expansion of the existing use. The solar thermal energy system consists of solar collectors, heat exchangers, hot water storage tanks, piping, insulation, and associated racking, wiring, fittings, and fasteners. The materials used to construct the system are chemically inert, not hazardous to human health, and do not have a significant effect on the environment. The system will undergo safety testing prior to installation at the demonstration site to ensure compliance with relevant environmental codes and standards. In addition, all required permits for construction and operation of the system will be obtained prior to system installation and demonstration. The demonstration will not have a significant impact on local air quality, noise, or traffic, and is expected to reduce local criteria pollutant emissions. For these reasons, the project will not have a significant effect on the environment and falls under the categorical exemption listed in 14 C.C.R. §15301.

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This project involves the construction, location, and installation of new, small facilities, structures, and equipment. In order to perform the demonstration, the system must be installed at the demonstration site. The installation will require minimal construction activity. The equipment may be placed on the roof of the facility or directly on the ground. This minimal construction is well within the size limits listed in the examples given in 14 C.C.R. § 15303 (e.g., it is less than a single-family residence, duplex, and the 2,500 square feet - or 10,000 square feet in urban areas - for a store, motel, office, restaurant, or similar structure). This construction will not have a significant impact on local air quality, noise, or traffic and will not induce additional operations at the site. For these reasons, the project will not have a significant effect on the environment and falls under the categorical exemption listed in 14 C.C.R. § 15303.

This project involves minor public or private alterations in the condition of land including minor trenching and backfilling where the surface is restored. The proposed project lacks infrastructure for underground cables and insulated pipes. For these reasons, the project will not have a significant effect on the environment and falls under the categorical exemption 14 C.C.R. § 15304.

☐ 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

Legal Company Name:

Budget

Skyven Technologies, LLC

\$ 358,726

PBL Engineering, Inc.

\$ 66,100

\$

\$

Legal Company Name:

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
GGRF	17-18	301.002A	\$2,842,368
			\$
			\$
			\$
R&D Program Area: EERO: IAW			\$2,842,368
Explanation for "Other" selection			
Reimbursement Contract #:	Federal Agreement #:		

Name:	David Lemons	Name:	Edwin Flores
Address:	400 S M St	Address:	400 S M St
City, State, Zip:	Tulare, CA 93274-5431	City, State, Zip:	Tulare, CA 93274-5431
Phone:	559-687-5609 /	Fax:	- -
E-Mail:	jdlemons@landolakes.com	E-Mail:	egflores@landolakes.com

☒ Competitive Solicitation

☐ First Come First Served Solicitation

Solicitation #: GFO-18-901 - 20

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**The following items should be attached to this GRF**

1. Exhibit A, Scope of Work	<input checked="" type="checkbox"/>	Attached
2. Exhibit B, Budget Detail	<input checked="" type="checkbox"/>	Attached
3. CEC 105, Questionnaire for Identifying Conflicts	<input checked="" type="checkbox"/>	Attached
4. Recipient Resolution	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Attached
5. CEQA Documentation	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Attached

Agreement Manager_____
Date_____
Office Manager_____
Date_____
Deputy Director_____
Date

EXHIBIT A
Scope of Work
Land O'Lakes, Inc.

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR¹	Task Name
1		General Project Tasks
2	X	Project Engineering Design
3	X	Site Preparation and Equipment Procurement
4	X	Equipment Installation
5		Measurement and Verification
6		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
M&V	Measurement and Verification
GHG	Green House Gas
Recipient	Land O'Lakes

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

A. Purpose of Agreement

The purpose of this agreement is to design, install, and operate a high-temperature solar thermal energy system at the Recipient's dairy processing facility. This system will convert solar energy into supplemental heat for thermal processes resulting in reduced natural gas consumption and greenhouse gas (GHG) emissions. Natural gas consumption will be measured before and after the system is installed in order to quantify and validate the GHG emissions reductions.

B. Problem/ Solution Statement

Problem

California produces nearly 20 percent of U.S. milk and is the largest producer of milk and dairy products in the nation. Of the approximately 40 billion pounds of milk produced in California annually, over 80 percent is used to produce dairy products such as ice cream, butter, dried milk, and cheese.² Processing of milk into dairy products is an energy intensive process requiring large

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.

² California Dairy Statistics 2017 Annual. California Department of Food and Agriculture. 2017. https://www.cdffa.ca.gov/dairy/pdf/Annual/2017/2017_Statistics_Annual.pdf

EXHIBIT A

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Land O'Lakes, Inc.

amounts of heat, typically provided by burning natural gas. Supplementing heat required for thermal processes with solar thermal energy could significantly reduce natural gas consumption and GHG emissions in dairy processing industries. However, there is a lack of successful, high-temperature demonstrations of solar thermal energy systems in dairy processing facilities.

Solution

The Recipient will design, install, and operate a high-temperature solar thermal energy system to support operations at a dairy processing facility. The solar thermal system will convert solar energy into supplemental heat for thermal processes required to process milk into dairy products. By implementing the solar thermal system, the facility will reduce both natural gas consumption and GHG emissions. Successful demonstration of this system would also support the viability of solar thermal systems for reducing natural gas consumption in dairy processing or related industrial facilities.

C. Goals and Objectives of the Agreement

Agreement Goals

The goal of this Agreement is to reduce GHG emissions at the dairy processing facility by using solar thermal energy to offset natural gas consumption at the facility.

Agreement Objectives

The objectives of this Agreement are to:

- Measure the dairy processing facility's natural gas consumption in order to establish a baseline for future comparisons.
- Design a high-temperature solar thermal energy system capable of providing heat to offset the natural gas burned by the dairy processing facility.
- Install and operate the high-temperature solar thermal energy system at the dairy processing facility.
- Measure and validate the natural gas and GHG emission reductions resulting from the high-temperature solar thermal energy system

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.

EXHIBIT A
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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.

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- **Software Application Development**

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

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

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

MEETINGS

Subtask 1.2 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

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

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

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

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

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports and invoices (subtask 1.5);
 - Final Report (subtask 1.6); 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.

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- Submit the CPR Report along with any other *Task Products* that correspond to the technical task for which the CPR meeting is required (i.e., if a CPR meeting is required for Task 2, submit the Task 2 products along with the CPR Report).
- Attend the CPR meeting.
- Present the CPR Report and any other required information at each CPR meeting.

The CAM shall:

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

Recipient Products:

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

CAM Products:

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

Subtask 1.4 Final Meeting

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

The Recipient shall:

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

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.

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- 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

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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:

- 1) 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**)
 - Follow the Style Guide format requirements for headings, figures/tables, citations, and acronyms/abbreviations.
 - 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

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- 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.

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- 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.

The Recipient shall:

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

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

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

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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*)

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Land O'Lakes, Inc.

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: PROJECT ENGINEERING DESIGN

The goal of this task is to design the solar thermal energy system.

The Recipient shall:

- Identify the thermal load in the facility to be offset by the solar thermal energy system.
- Design a solar thermal energy system that will capture heat from the sun and transfer the heat to the facility to partially offset the identified thermal load.
- Design the support structure for the solar thermal energy system.
- Design the control architecture and control system including human machine interface.
- Design the data acquisition system to capture real-time data such as air and water temperature, water flow rate, and other metrics to calculate gas savings.
- Provide a *Project Design Memo* that shall include, but not be limited to:
 - Summary of the steps taken to reach the final design and final layout;
 - Identification of barriers involved and discuss the steps taken to overcome those barriers; and
 - Discussion of the final engineer design and equipment layout for the site.
- Prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR Meeting.

Products:

- Project Design Memo (draft and final)
- CPR Report #1

TASK 3: SITE PREPARATION AND EQUIPMENT PROCUREMENT

The goal of this task is to develop equipment specifications and bid documents based on the engineering design, secure bids and select subcontractors, procure the necessary equipment and materials for this project, and secure all required permits.

The Recipient shall:

- Develop detailed equipment specifications based on the solar thermal energy system engineering design.
- Develop any required bid documents for the solar thermal energy system.
- Secure bids for the solar thermal energy system.
- Establish purchase orders for the equipment and construction of support structures and arrange for shipment, receipt, and inspection of the equipment at the facility.
- Secure building permits for the new above and below ground structures from the local permitting agency required for the overall system installation.

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- Prepare the site for equipment installation, including trenching, piping, and related site work.
- Identify the preliminary plans for equipment delivery.
- Procure the equipment for the solar thermal energy system such as:
 - Solar thermal components including collectors, racking, and system support structure;
 - Mechanical components including heat exchangers, pumps, tanks, insulation, pipes, valves, and fittings; and
 - Electrical and control components including instrumentation, controllers, power supplies, and wiring.
- Provide a *Site Preparation and Equipment Procurement Memo* that shall include, but not be limited to:
 - Summary of the steps to prepare the 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 all required permits needed for installation;
 - Copy of the purchase order showing final costs for the solar thermal energy system; and
 - Status of the planned installation including preliminary schedule for equipment delivery and installation.
- Prepare a *CPR Report #2* in accordance with subtask 1.3. (CPR Meetings)
- Participate in a CPR Meeting.

Products:

- Site Preparation and Equipment Procurement Memo (draft and final)
- CPR Report #2

TASK 4: EQUIPMENT INSTALLATION

The goal of this task is to install and commission the necessary equipment for this project.

The Recipient shall:

- Install the solar thermal system per the engineering design. This includes installing the solar thermal collectors, the mechanical system components, and the electrical and controls system components.
- Perform all required system safety checks including system pressurization testing.
- Start-up and commission the equipment and make adjustments as needed to meet the stated equipment performance specifications.
- Verify the integrity and functionality of the installed solar thermal systems, mechanical systems, and electrical and controls systems,
- Provide an *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

EXHIBIT A
Scope of Work
Land O'Lakes, Inc.

- Discuss results of equipment start-up and commissioning at each site with respect to whether the equipment as installed meets the stated performance specifications.
- Prepare a *CPR Report #3* in accordance with subtask 1.3. (CPR Meetings)
- Participate in a CPR Meeting.

Products:

- Equipment Installation Memo (draft and final)
- CPR Report #3

EXHIBIT A
Scope of Work
Land O'Lakes, Inc.

TASK 5: MEASUREMENT AND VERIFICATION

The goal of this task is to report the benefits resulting from this project by performing measurement and verification (M&V) of GHG and energy consumption reduction.

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 the demonstration site(s)
- Develop M&V protocol for pre-installation measurement (and calculation):
 - Electric, natural gas and/or other fossil fuel consumption and GHG 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 *M&V Plan* 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 M&V 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-installation.
- Prepare and provide a *Pre-Installation M&V Findings Report* for each demonstration site that includes M&V protocol, pre-installation 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 GHG 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 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; and
 - A summary of M&V findings from the reporting period.
- Analyze post-installation electrical, natural gas and/or other fossil fuel consumption and GHG emissions.
- Prepare and provide a *Post-Installation M&V Findings Report* that includes M&V protocol, post-installation measurements (and 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 GHG emissions that directly result from this project.

EXHIBIT A

Scope of Work

Land O'Lakes, Inc.

- Provide all key assumptions used to estimate and determine energy and GHG 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:

- M&V Plan (draft and final)
- Pre-Installation M&V Findings Report (draft and final)
- Post-Installation M&V Findings Report (draft and final)

TASK 6: 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 (6) six *High Quality Digital Photographs* (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project site(s) or related project photographs.

Products:

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

V. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: LAND O'LAKES, INC.

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-18-002 with Land O'Lakes, Inc. for a \$2,842,368 grant to design, install, and operate a high-temperature solar thermal energy system at the recipient's dairy processing facility in Tulare, California, and adopting staff's determination that this action is exempt from the California Environmental Quality Act. This system will convert solar energy into supplemental heat for thermal processes resulting in reduced natural gas consumption and greenhouse gas emissions; 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