



GRANT REQUEST FORM (GRF)

A) New Agreement # EPC-20-048 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
ERDD	Rajesh Kapoor	51	916-776-0778

C) Recipient's Legal Name	Federal ID Number
Gate 5 Energy Partners, Inc.	27-4456038

D) Title of Project
Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology

E) Term and Amount

Start Date	End Date	Amount
6/30/2021	6/30/2025	\$ 1,603,779

F) Business Meeting Information

ARFVTP agreements \$75K and under delegated to Executive Director

Proposed Business Meeting Date 6/9/2021 Consent Discussion

Business Meeting Presenter Rajesh Kapoor Time Needed: 5 minutes

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

Agenda Item Subject and Description:

Gate 5 Energy Partners, Inc. Proposed resolution adopting California Environmental Quality Act Findings and approving the grant agreement for the demonstration of Gate 5 Energy Partners, Inc.'s advanced primary and secondary wastewater treatment technology. (EPIC funding)
Contact: Rajesh Kapoor.

1. CEQA Findings. Proposed resolution finding that based on the lead agency Santa Margarita Water District's (SMWD) December 20, 2013 Final Initial Study (as revised on February 5, 2014), Mitigated Negative Declaration (MND), Mitigation Monitoring and Reporting Plan (MMRP), and SMWD's Resolution No. 2014-02-02 approving and adopting the MND and MMRP, the proposed project presents no new significant or substantially more severe environmental impacts beyond those already considered.

2. Proposed resolution approving agreement EPC-20-048 with Gate 5 Energy Partners, Inc. for a \$1,603,779 grant to develop and demonstrate an advanced primary and secondary wastewater treatment with energy-positive solids management. The demonstration will include verification of the proposed technology's performance and benefits, including reduced energy use and cost, in comparison to conventional pre-demonstration operations as well as knowledge transfer activities to encourage the commercialization of this technology.

G) California Environmental Quality Act (CEQA) Compliance

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

Yes (skip to question 2)

No (complete the following (PRC 21065 and 14 CCR 15378)):



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Explain why Agreement is not considered a "Project":

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

- a) Agreement **IS** exempt.
 - Statutory Exemption. List PRC and/or CCR section number:
 - Categorical Exemption. List CCR section number:
 - Common Sense Exemption. 14 CCR 15061 (b) (3)

Explain reason why Agreement is exempt under the above section:

b) Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- Initial Study
- Negative Declaration
- Mitigated Negative Declaration
- Environmental Impact Report
- Statement of Overriding Considerations

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

Legal Company Name:	Budget
Stanford University [Match(\$12,920)]	\$ 417,305
TBD– General Contractor Services	\$220000
Santa Margarita Water District (Match \$25,000)	\$
Base Energy, San Francisco, CA	\$ 20,000
J Morris, Newport Beach, CA	\$ 7,500
Stradling Law Firm, Irvine, CA	\$ 12,000
Ken Stedman, CA (Match \$25,000)	\$

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

Legal Company Name:



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J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
EPIC	20-21	301.001H	\$1,603,779
			\$
			\$
			\$
			\$

R&D Program Area: EERO: IAW

TOTAL: \$ 1,603,779

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Steven Delson
Address: 5270 California Ave Ste 200

City, State, Zip: Irvine, CA 92617-3231

Phone: 949 -- 831-1213
E-Mail: steve.d@gate-5.com

2. Recipient's Project Manager

Name: Steven Delson
Address: 5270 California Ave Ste 200

City, State, Zip: Irvine, CA 92617-3231

Phone: 949 -- 831-1213
E-Mail: steve.d@gate-5.com

L) Selection Process Used

- Competitive Solicitation Solicitation #: GFO-20-309
- First Come First Served Solicitation Solicitation #:
- Non-Competitive Bid Follow-on Funding (SB 115)

M) The following items should be attached to this GRF

- 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



STATE OF CALIFORNIA

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CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

Deputy Director

Date

Exhibit A
Scope of Work
Gate 5 Energy Partners, Inc.

I. TASK ACRONYM/TERM LISTS

A. Task List

Task #	CPR ¹	Task Name
1		General Project Tasks
2		Benchmarking Activities
3	X	Finalize design, Fabricate, and Install Demonstration Facility
4	X	Commission and Optimize Demonstration Facility
5		Long-term Operation of System
6		Project Measurement and Verification
7		Evaluation of Project Benefits
8		Technology/Knowledge Transfer Activities

B. Acronym/Term List

Acronym/Term	Meaning
BOD	Biochemical Oxygen Demand
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CAS	Conventional Activated Sludge
CBUMF	Continuously Backwashed Upflow Media Filter
CEC	California Energy Commission
COD	Chemical Oxygen Demand
CPR	Critical Project Review
MBBR	Moving-bed biofilm reactor
M&V	Measurement & Verification
MG5	Advanced primary and secondary treatment with energy-positive solids management
Recipient	Gate 5 Energy Partners, Inc.
TAC	Technical Advisory Committee
TSS	Total Suspended Solids
VSS	Volatile Suspended Solids

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

A. Purpose of Agreement

The purpose of this Agreement is to demonstrate the advanced primary and secondary treatment with energy-positive solids management (MG5) wastewater treatment system at the project host-site at a scale of 0.5 million gallons per day. Demonstration will include verification of technology performance and benefits in comparison to pre-demonstration operations as well as knowledge transfer activities to encourage commercialization of this technology.

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

Exhibit A Scope of Work Gate 5 Energy Partners, Inc.

B. Problem/ Solution Statement

Problem

The long-used Conventional Activated Sludge (CAS) treatment paradigm is fundamentally at odds with the goals of energy efficiency and recovery because it misdirects influent solids. Up to 88 percent of influent organic material in wastewater treatment plants is in a particulate form that is not rapidly biodegradable. Much of this material passes through typical primary clarifiers into CAS treatment where it requires a long residence time to decompose, requiring large reactor footprints. Wastewater must be aerated during this decomposition, consuming substantial power to oxidize and destroy most of the chemical energy in the wastewater. Only one third of the energy is transferred to biomass with a potential recovery value. This biomass has a high initial moisture content and is just 30-50 percent digestible, limiting its potential for resource recovery. These limitations result in a 20-50 percent maximum recovery of the chemical energy in wastewater treated with CAS. Although CAS can reliably achieve today's U.S. Secondary Effluent standards, it does so at a high cost in terms of energy, footprint, and complexity. Its chief byproduct, biosolids, are of limited resource value, contain controversial "contaminants of concern," and require additional management costs for volume reduction, pathogen destruction, and transport.

Solution

The Recipient will demonstrate an advanced primary treatment system that relies on two filtration mechanisms, a micro screen and a continuously backwashed upflow media filter (CBUMF), to extract energy-rich solids from wastewater. A follow-up advanced secondary treatment system consisting of a moving-bed biofilm reactor (MBBR) and tertiary CBUMF removes remaining soluble contaminants. This combined system can achieve effluent meeting the California Title 22 definition of filtered wastewater, meaning it is ready for standard disinfection and subsequent use in non-potable applications.

Diverting solids early in the wastewater treatment process, this complete system enables treatment in much smaller footprints, with dramatically less aeration required. Energy consumption is also reduced dramatically, while the diverted solids enable more efficient energy recovery and export of power.

C. Goals and Objectives of the Agreement

Agreement Goals

The goals of this Agreement are to:

- Demonstrate that the proposed advanced primary and secondary wastewater treatment can reliably reduce electricity usage and footprint relative to conventional treatment.

Ratepayer Benefits:² This Agreement will result in the ratepayer benefits of reducing electricity use and lower operating costs by accelerating adoption of technology that will yield approximately

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

Exhibit A Scope of Work Gate 5 Energy Partners, Inc.

\$32 million in rate payer savings annually from reduced energy consumption (assuming 20% market penetration in 25 years). Because the energy is saved locally, it directly reduces the cost to local rate payers and provides energy security.

Technological Advancement and Breakthroughs:³ This Agreement will lead to technological advancement and breakthroughs to overcome barriers to the achievement of the State of California's statutory energy goals by demonstrating the new MG5 wastewater treatment at the host site that reduces electricity consumption aligning with the objectives of SB 350 and SB 100. By reducing energy needs for electricity purchase and biosolids transport, the MG5 technology also directly address AB 32 and SB 32 to reduce greenhouse gas emissions.

Agreement Objectives

The objectives of this Agreement are to:

- Deploy a demonstration of advanced primary and secondary treatment with associated solids management at a scale of 0.5 million gallons per day at project host-site, which currently treats at least one million gallons per day
- Verify performance and benefits of this new system relative to conventional systems
- Demonstrate reduced electricity usage by 82% and footprint by 80% relative to conventional treatment
- Transfer learning and knowledge of project successes to the broader California utility and industrial sector.

II. TASK 1 GENERAL PROJECT TASKS

PRODUCTS

Subtask 1.1 Products

The goal of this subtask is to establish the requirements for submitting project products (e.g., reports, summaries, plans, and presentation materials). Unless otherwise specified by the Commission Agreement Manager (CAM), the Recipient must deliver products as required below by the dates listed in the **Project Schedule (Part V)**. All products submitted which will be viewed by the public, must comply with the accessibility requirements of Section 508 of the federal Rehabilitation Act of 1973, as amended (29 U.S.C. Sec. 794d), and regulations implementing that act as set forth in Part 1194 of Title 36 of the Federal Code of Regulations. All technical tasks should include product(s). 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.

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- 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 California Energy Commission's (CEC) 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.

The following describes the accepted formats for electronic data and documents provided to the CEC 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.
- Project management documents will be in Microsoft Project file format, version 2007 or later.

○ **Software Application Development**

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

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

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- 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 CEC'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 CEC 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;
- Invoicing and auditing procedures;
- Administrative products (subtask 1.1);
- CPR meetings (subtask 1.3);
- Match fund documentation (subtask 1.7);
- Permit documentation (subtask 1.8);
- Subcontracts (subtask 1.9); and
- Any other relevant topics.

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

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
 - An updated Project Schedule;
 - Technical products (subtask 1.1);
 - Progress reports (subtask 1.5);
 - Final Report (subtask 1.6);
 - Technical Advisory Committee meetings (subtasks 1.10 and 1.11); and
 - Any other relevant topics.
- Provide *Kick-off Meeting Presentation* to include but not limited to:
 - Project overview (i.e. project description, goals and objectives, technical tasks, expected benefits, etc.)
 - Project schedule that identifies milestones
 - List of potential risk factors and hurdles, and mitigation strategy

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- Provide an *Updated Project Schedule*, *Match Funds Status Letter*, and *Permit Status Letter*, 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:

- Kick-off Meeting Presentation
- Updated Project Schedule (*if applicable*)
- Match Funds Status Letter (subtask 1.7) (*if applicable*)
- Permit Status Letter (subtask 1.8) (*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 CEC 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 CEC and the Recipient. As determined by the CAM, discussions may include project status, challenges, successes, advisory group findings and recommendations, final report preparation, and progress on technical transfer and production readiness activities (if applicable). Participants will include the CAM and the Recipient and may include the CAO and any other individuals selected by the CAM to provide support to the CEC.

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 CEC, 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 and submit 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.
- 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* with 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.

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- 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)

CAM Products:

- CPR Agenda
- 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 CEC 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 procured equipment.
 - The CEC'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 copies of *All Final Products* on a USB memory stick, organized by the tasks in the Agreement.

Products:

- Final Meeting Agreement Summary (*if applicable*)
- Schedule for Completing Agreement Closeout Activities

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- All Final Products

REPORTS AND INVOICES

Subtask 1.5 Progress Reports and Invoices

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

The Recipient shall:

- Submit a monthly *Progress Report* to the CAM. Each progress report must:
 - Summarize 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 monthly or quarterly *Invoice* that follows the instructions in the “Payment of Funds” section of the terms and conditions, including a financial report on Match Funds 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. When creating the Final Report Outline and the Final Report, the Recipient must use the CEC Style Manual provided by the CAM.

Subtask 1.6.1 Final Report Outline

The Recipient shall:

- Prepare a *Final Report Outline* in accordance with the *Energy Commission Style Manual* provided by the CAM.

Recipient Products:

- Final Report Outline (draft and final)

CAM Product:

- Energy Commission Style Manual
- Comments on Draft Final Report Outline
- Acceptance of Final Report Outline

Subtask 1.6.2 Final Report

Exhibit A Scope of Work Gate 5 Energy Partners, Inc.

The Recipient shall:

- Prepare a *Final Report* for this Agreement in accordance with the approved Final Report Outline, Energy Commission 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)
 - Preface (**required**)
 - Abstract, keywords, and citation page (**required**)
 - Table of Contents (**required**, followed by List of Figures and List of Tables, if needed)
 - Executive summary (**required**)
 - Body of the report (**required**)
 - References (if applicable)
 - Glossary/Acronyms (If more than 10 acronyms or abbreviations are used, it is required.)
 - Bibliography (if applicable)
 - Appendices (if applicable) (Create a separate volume if very large.)
 - Attachments (if applicable)
- Submit a draft of the Executive Summary to the TAC for review and comment.
- Develop and submit a *Summary of TAC Comments* received on the Executive Summary. For each comment received, the recipient will identify in the summary the following:
 - Comments the recipient proposes to incorporate.
 - Comments the recipient does propose to incorporate and an explanation for why.
- Submit a draft of the report to the CAM for review and comment. The CAM will provide written comments to the Recipient on the draft product within 15 days of receipt.
- Incorporate all CAM comments into the *Final Report*. If the Recipient disagrees with any comment, provide a *Written Responses to Comments* explaining why the comments were not incorporated into the final product.
- Submit the revised *Final Report* electronically with any *Written Responses to Comments* within 10 days of receipt of CAM's *Written Comments* on the Draft Final Report, unless the CAM specifies a longer time period or approves a request for additional time.

Products:

- Summary of TAC Comments
- Draft Final Report
- *Written Responses to Comments (if applicable)*
- Final Report

CAM Product:

- *Written Comments* on the Draft Final Report

MATCH FUNDS, PERMITS, AND SUBCONTRACTS

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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 CEC 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 CEC 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 CEC 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

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and the expenses associated with obtaining permits are not reimbursable under this Agreement, with the exception of costs incurred by University of California recipients. Permits must be identified and obtained before the Recipient may incur any costs related to the use of the permit(s) for which the Recipient will request reimbursement.

The Recipient shall:

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

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

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

Products:

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

Subtask 1.9 Subcontracts

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

The Recipient shall:

- Manage and coordinate subcontractor activities in accordance with the requirements of this Agreement.
- Incorporate this Agreement by reference into each subcontract.
- Include any required Energy Commission flow-down provisions in each subcontract, in addition to a statement that the terms of this Agreement will prevail if they conflict with the subcontract terms.
- If required by the CAM, submit a draft of each *Subcontract* required to conduct the work under this Agreement.
- Submit a final copy of each executed subcontract.

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- Notify and receive written approval from the CAM prior to adding any new subcontractors (see the discussion of subcontractor additions in the terms and conditions).

Products:

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

TECHNICAL ADVISORY COMMITTEE

Subtask 1.10 Technical Advisory Committee (TAC)

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

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
 - Technical area expertise;
 - Knowledge of market applications; or
 - Linkages between the agreement work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the state of California, and provide recommendations as needed to enhance the benefits.
- Provide recommendations regarding information dissemination, market pathways, or commercialization strategies relevant to the project products.
- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.
- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate, to the extent the TAC members feel is appropriate, on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that insure a long-term perspective on decision-making and progress toward the project's strategic goals.

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

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

Exhibit A
Scope of Work
Gate 5 Energy Partners, Inc.

- Utility representatives;
- Air district staff; and
- Members of relevant technical society committees.

The Recipient shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.11.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member.

Products:

- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

Subtask 1.11 TAC Meetings

The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held via teleconference.

The Recipient shall:

- Discuss the TAC meeting schedule with the CAM at the Kick-off meeting. Determine the number and location of meetings (in-person and via teleconference) in consultation with the CAM.
- Prepare a *TAC Meeting Schedule* that will be presented to the TAC members during recruiting. Revise the schedule after the first TAC meeting to incorporate meeting comments.
- Prepare a *TAC Meeting Agenda* and *TAC Meeting Back-up Materials* for each TAC meeting.
- Organize and lead TAC meetings in accordance with the TAC Meeting Schedule. Changes to the schedule must be pre-approved in writing by the CAM.
- Prepare *TAC Meeting Summaries* that include any recommended resolutions of major TAC issues.

The TAC shall:

- Help set the project team's goals and contribute to the development and evaluation of its statement of proposed objectives as the project evolves.
- Provide a credible and objective sounding board on the wide range of technical and financial barriers and opportunities.

Exhibit A

Scope of Work

Gate 5 Energy Partners, Inc.

- Help identify key areas where the project has a competitive advantage, value proposition, or strength upon which to build.
- Advocate on behalf of the project in its effort to build partnerships, governmental support and relationships with a national spectrum of influential leaders.
- Ask probing questions that insure a long-term perspective on decision-making and progress toward the project's strategic goals.
- Review and provide comments to proposed project performance metrics.
- Review and provide comments to proposed project Draft Technology Transfer Plan.

Products:

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

Subtask 1.12 Project Performance Metrics

The goal of this subtask is to identify key performance targets for the project. The performance targets should be a combination of scientific, engineering, techno-economic, and/or programmatic metrics that provide the most significant indicator of the research or technology's potential success.

The Recipient shall:

- Complete and submit the draft *Project Performance Metrics Questionnaire* to the CAM prior to the Kick-off Meeting.
- Present the draft *Project Performance Metrics Questionnaire* at the first TAC meeting to solicit input and comments from the TAC members.
- Develop and submit a *TAC Performance Metrics Summary* that summarizes comments received from the TAC members on the proposed project performance metrics. The *TAC Performance Metrics Summary* will identify:
 - TAC comments the recipient proposes to incorporate into the final *Project Performance Metrics Questionnaire*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit a final *Project Performance Metrics Questionnaire* with incorporated TAC feedback.
- Develop and submit a *Project Performance Metrics Results* document describing the extent to which the recipient met each of the performance metrics in the final *Project Performance Metrics Questionnaire*.
- Discuss the final *Project Performance Metrics Questionnaire* and *Project Performance Metrics Results* at the Final Meeting.

Products:

- Project Performance Metrics Questionnaire (draft and final)
- TAC Performance Metrics Summary
- Project Performance Metrics Results

III. TECHNICAL TASKS

Exhibit A

Scope of Work

Gate 5 Energy Partners, Inc.

TASK 2 BENCHMARKING ACTIVITIES

The goals of this task are to (1) characterize the performance and costs of the existing system at the project host-site and similar plants around California; and (2) apply baseline data from pilot systems to refine key research questions and guide process scale-up.

The Recipient shall:

- Collect benchmark data for water quality, energy use, and production of energy and biosolids from the following sources, at a minimum:
 - project host-site
 - ongoing CBUMF pilot tests
 - literature
- Prepare a *Benchmarking Report* including a summary of the benchmarking data collected, synthesis and summary of key performance metrics at the project host-site, at other conventional treatment plants in general, and from pilot tests of the proposed treatment system.

Products:

- Benchmarking Report

TASK 3 FINALIZE DESIGN, FABRICATE, AND INSTALL DEMONSTRATION FACILITY

The goal of this task is to complete designs and deploy the advanced primary and advanced secondary treatment processes at the project host-site.

The Recipient shall:

- Finalize the design criteria for the demonstration facility
- Develop the design and layout of necessary site modifications at the project host-site
- Select contractors for performing site modifications
- Fabricate the various components of the demonstration system
- Install the demonstration system at the project host-site
- Prepare a *Startup and Test Plan* that includes but is not limited to a discussion of:
 - A description of the facility as built and installed
 - Startup procedures
 - Metrics for performance verification
 - Data analysis procedures
- Prepare a *CPR Report #1* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- Startup and Test Plan
- CPR Report #1

TASK 4 COMMISSION AND OPTIMIZE DEMONSTRATION FACILITY

The goal of this task is to test and optimize the installed demonstration system at the project host-site on a variety of different flow regimes to identify peak performance values and optimal setpoints.

Exhibit A

Scope of Work

Gate 5 Energy Partners, Inc.

The Recipient shall:

- Start up the facility using one of the containerized liquids treatment systems
- Identify optimal process setpoints to achieve water quality targets while minimizing energy consumption such as:
 - Coagulant dosage
 - Filter backwash rate
- Startup successive containerized liquids treatment system(s) as each unit stabilizes until full flow is reached
- Develop operating procedures for all demonstration systems in collaboration with project host-site operations staff to enable long-term operation by project host-site staff
- Prepare a *System Commissioning Report* detailing system performance, startup procedures, and optimal setpoints
- Prepare a *CPR Report 2* in accordance with subtask 1.3 (CPR Meetings).
- Participate in a CPR meeting.

Products:

- System Commissioning Report
- CPR Report #2

TASK 5 LONG-TERM OPERATION OF SYSTEM

The goals of this task are to (1) demonstrate long-term performance of the system under varying real conditions and (2) transition daily system operations to project host-site operations staff.

The Recipient shall:

- Operate the demonstration system for at least eight months, or other time period as approved in writing by the CAM, and evaluate facility performance and costs including the following parameters:
 - Water quality (Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Turbidity) at key junctures of the treatment process (system influent, advanced primary effluent, advanced secondary effluent)
 - Solids balance
 - Energy Balance (fuel production and power consumption)
 - Capital and O&M Costs
- Construct a COD mass balance to describe how organic material is managed throughout the process
- Complete training of project host-site personnel and hand operations off to project host-site staff
- Prepare a *System Handoff Report* that includes but is not limited to a discussion of:
 - Operations & maintenance activities
 - Final system operating procedures
 - Results from operating the system and the impact on the parameters listed in this task, including evaluation of facility performance and costs
 - Lessons learned and potential design improvements

Products:

- System Handoff Report

Exhibit A Scope of Work Gate 5 Energy Partners, Inc.

TASK 6 PROJECT MEASUREMENT AND VERIFICATION

The goal of this task is to conduct independent third-party measurement and verification (M&V) to measure and quantify project benefits.

The Recipient shall:

- Consult with the CAM to identify and confirm the specific project benefits to be measured. At a minimum this will include pre- and post-project energy use (kilowatt hours, kilowatts, therms), calculations of energy cost savings and greenhouse gas emissions, energy saving goals/objectives from Section I.C. and performance metrics from Subtask 1.12. When directed by the CAM, this can include pre and post measurements of water use (million gallons) and other project benefits, and calculations of the resulting cost savings and greenhouse gas emission reductions.
- Enter into agreement with M&V vendor per Task 1.9
- Coordinate site visits with the M&V firm at the demonstration site(s) identified.
- Develop M&V Plan for **pre-install** measurement of:
 - Host site influent and effluent water quality (COD, BOD, TSS, Volatile Suspended Solids (VSS), Turbidity) at the following locations:
 - ◆ Primary influent
 - ◆ Primary effluent
 - ◆ Secondary effluent
 - Project host-site power consumption and production
 - Project host-site chemicals use
 - Project host-site Operation and Maintenance costs
- Perform pre-install measurements based on the M&V Plan for pre-install
- Develop M&V Plan for **post-install** measurement of:
 - Demonstration system influent and effluent water quality (COD, BOD, TSS, VSS, Turbidity) at the following locations:
 - Primary influent
 - Primary effluent
 - Secondary effluent
 - Demonstration system power consumption
 - Demonstration system chemicals use
 - Demonstration system Operation and Maintenance costs
- Perform post-install measurements based on M&V Plan for post-install
- Prepare *M&V Findings Report* for the demonstration site that includes M&V Plan, pre and post install measurements, analysis, results performed in this task as agreed with the CAM and whether the goals/objectives in Section II.C and performance metrics in Subtask 1.12 were achieved..

Products:

- M&V Findings Report

TASK 7 EVALUATION OF PROJECT BENEFITS

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

The Recipient shall:

Exhibit A
Scope of Work
Gate 5 Energy Partners, Inc.

- Complete three Project Benefits Questionnaires that correspond to three main intervals in the Agreement: (1) *Kick-off Meeting Benefits Questionnaire*; (2) *Mid-term Benefits Questionnaire*; and (3) *Final Meeting Benefits Questionnaire*.
- Provide all key assumptions used to estimate projected benefits, including targeted market sector (e.g., population and geographic location), projected market penetration, baseline and projected energy use and cost, operating conditions, and emission reduction calculations. Examples of information that may be requested in the questionnaires include:
 - For Product Development Projects and Project Demonstrations:
 - Published documents, including date, title, and periodical name.
 - Estimated or actual energy and cost savings, and estimated statewide energy savings once market potential has been realized. Identify all assumptions used in the estimates.
 - Greenhouse gas and criteria emissions reductions.
 - Other non-energy benefits such as reliability, public safety, lower operational cost, environmental improvement, indoor environmental quality, and societal benefits.
 - Data on potential job creation, market potential, economic development, and increased state revenue as a result of the project.
 - A discussion of project product downloads from websites, and publications in technical journals.
 - A comparison of project expectations and performance. Discuss whether the goals and objectives of the Agreement have been met and what improvements are needed, if any.
 - Additional Information for Product Development Projects:
 - Outcome of product development efforts, such copyrights and license agreements.
 - Units sold or projected to be sold in California and outside of California.
 - Total annual sales or projected annual sales (in dollars) of products developed under the Agreement.
 - Investment dollars/follow-on private funding as a result of Energy Commission funding.
 - Patent numbers and applications, along with dates and brief descriptions.
 - Additional Information for Product Demonstrations:
 - Outcome of demonstrations and status of technology.
 - Number of similar installations.
 - Jobs created/retained as a result of the Agreement.
 - For Information/Tools and Other Research Studies:
 - Outcome of project.
 - Published documents, including date, title, and periodical name.
 - A discussion of policy development. State if the project has been cited in government policy publications or technical journals, or has been used to inform regulatory bodies.
 - The number of website downloads.
 - An estimate of how the project information has affected energy use and cost, or have resulted in other non-energy benefits.
 - An estimate of energy and non-energy benefits.

Exhibit A
Scope of Work
Gate 5 Energy Partners, Inc.

- 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 CEC may send the Recipient similar questionnaires after the Agreement term ends. Responses to these questionnaires will be voluntary.

Products:

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

TASK 8 TECHNOLOGY/KNOWLEDGE TRANSFER ACTIVITIES

The goal of this task is to conduct activities that will accelerate the commercial adoption of the technology being supported under this agreement. Eligible activities include, but are not limited to, the following:

- Scale-up analysis including manufacturing analysis, independent design verification, and process improvement efforts.
- Technology verification testing, or application to a test bed program located in California.
- Legal services or licensing to secure necessary intellectual property to further develop the technology
- Market research, business plan development, and cost-performance modeling.
- Entry into an incubator or accelerator program located in California.

The Recipient Shall:

- Develop and submit a *Technology Transfer Plan (Draft/Final)* that identifies the proposed activities the recipient will conduct to accelerate the successful commercial adoption of the technology.
- Present the *Draft Technology Transfer Plan* to the TAC for feedback and comments.
- Develop and submit a *Summary of TAC Comments* that summarizes comments received from the TAC members on the *Draft Technology Transfer Plan*. This document will identify:
 - TAC comments the recipient proposes to incorporate into the *Final Technology Transfer Plan*.
 - TAC comments the recipient does not propose to incorporate with and explanation why.
- Submit the *Final Technology Transfer Plan* to the CAM for approval.
- Implement activities identified in *Final Technology Transfer Plan*.

Exhibit A
Scope of Work
Gate 5 Energy Partners, Inc.

- Develop and submit a *Technology Transfer Summary Report (Draft/Final)* that includes high level summaries of the activities, results, and lessons learned of tasks performed relating to implementing the *Final Technology Transfer Plan*. This report should not include any proprietary information.
- When directed by the CAM, develop presentation materials for an CEC- sponsored conference/workshop(s) on the project.
- When directed by the CAM, participate in annual EPIC symposium(s) sponsored by the CEC.
- 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 sites or related project photographs.

Products:

- Technology Transfer Plan (Draft/Final)
- Summary of TAC Comments
- Technology Transfer Summary Report (Draft/Final)
- High Quality Digital Photographs

IV. PROJECT SCHEDULE

Please see the attached Excel spreadsheet.

To: EPC-20-048, Demonstration of Gate 5 Energy Partners, Inc.'s advanced primary and secondary wastewater treatment technology project

CEQA Analysis Date: May 28, 2021, Telephone: 916-776-0778, From: Rajesh Kapoor

Subject: California Environmental Quality Act Analysis for EPC-20-048

I am a Mechanical Engineer, California Energy Commission, and am the Commission's Agreement Manager for proposed Agreement EPC-20-048 ("Agreement").

The proposed Agreement with Gate 5 Energy Partners, Inc. will demonstrate the installation and operation of an Energy Positive Advanced Primary and Secondary Wastewater Treatment Technology at the Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant in Rancho Mission Viejo, California ("Project"). The demonstration system will incorporate up to 1 million gallon per day (MGD) advanced primary and advanced secondary treatment system. This process effectively removes solids from wastewater early in the treatment process. Early removal of the solids from the water allows rapid degradation of the remaining organic material, minimizing the amount of energy-intensive aeration needed and the generation of hard-to-dispose secondary biosolids.

The Project includes the design, construction, and operation of an up to 1.0 MGD advanced primary and secondary wastewater treatment system. In accordance with the California Environmental Quality Act (CEQA) documentation (to be discussed later) the Project proposes the following:

- Intercept of influent flows from the existing grit chamber
- Microscreen
- Continuously-backwashed up-flow media filter (CBUMF)
- Moving-bed biofilm reactor (MBBR)
- Additional CBUMF
- Conveyance of effluent to existing disinfection system, and
- Conveyance of up to 3 wet tons a day of screened solids (~33 percent solids) to storage silo for final management or disposal

Finalize design, fabricate, and install demonstration facility and deploy the advanced primary and advanced secondary treatment processes at the project host-site.

The work to be undertaken for EPC-20-048 is covered in the CEQA documents prepared by lead agency, SMWG in 2014, including a Mitigated Negative Declaration (SCH 2013071095). Pursuant to SMWD Board Resolution No. 2014-02-02 (SMWD Resolution), SMWD filed a Notice of Determination (NOD) of its finding of a Mitigated Negative Declaration on February 19, 2014. This determination is based on the Mitigation Monitoring and Reporting Plan included in the SMWD Resolution as Exhibit A and summarized below:

SC AIR QUALITY-1 During construction of the project, SMWD and its contractors shall be required to comply with regional rules, which would assist in reducing short-term air pollutant emissions.

MM BIOLOGY-1 To the maximum extent practicable, vegetation removal shall not occur during the bird/raptor breeding season (January 15 to September 15).

MM BIOLOGY-2 Prior to granting an encroachment permit to Rancho Mission Viejo Company (RMV), evidence shall be presented to SMWD verifying that RMV has coordinated with the resource agencies to modify appropriate permits to include coverage of impacts within SMWD's Chiquita Water Reclamation Plant property.

SC CULTURAL RESOURCES-1 If human remains are encountered during any excavation or ground-disturbing work, Section 7050.5 of the *California Health and Safety Code* states that no further disturbances shall occur until the Orange County Coroner has made a determination of origin and disposition pursuant to Section 5097.98 of the *California Public Resources Code*. The Coroner must be notified of the find immediately.

MM CULTURAL RESOURCES -1 Should any archaeological resources be uncovered during Ground disturbing activities, these activities shall be diverted and a Orange County certified Archaeologist shall be contacted by the contractor.

MM CULTURAL RESOURCES -2 Should any paleontological resources be uncovered during grading or excavation activities; these activities shall be diverted to a part of the site away from the find.

MM NOISE – 1 Operation of heavy equipment, trucks, and other noise-generating activities associated with project construction shall be limited to the hours of 7AM to 8:00 PM, Monday through Saturday; there shall be no construction on Sundays or federal holidays.

MM NOISE-2 The processing equipment and facility shall be designed to limit noises from equipment when combined with noise from the other Chiquita Water Reclamation Plant CWRP facilities, does not exceed 55 dBA at any CWRP property line.

Pursuant to my work in developing the agreement, including the Scope of Work for the agreement, I have reviewed the SMWD initial study and NOD. Based on my review and consideration of the above documents, it is my professional opinion that, since the above CEQA documents have been finalized, there have been no new project changes, and no new, additional, or increased significant environmental impacts have occurred. Furthermore, I have not identified any new information which would change the conclusions of the SMWD's CEQA documents, or render those conclusions inadequate. It is also my professional opinion that the work to be performed under the proposed agreement falls within the scope SMWD's Initial Study and that the agreement will not result in any new significant environmental impacts.

As reflected by SMWD authorized representative Donald H. Bunts in the Environmental Checklist for the subject project beginning on page 52 of the relevant Staff Report a wide range of environmental issues and the following issues were determined to have either NO IMPACT or a LESS THAN SIGNIFICANT IMPACT.

The reasons for my conclusions are as follows in the brief explanation for all categories below:

Aesthetics: This proposed agreement has a less than significant impact on Aesthetics, and will not change the impacts identified in the SMWD CEQA documents.

Agriculture and Forest: The proposed agreement will have less than significant impact on Forest resources, and will not change the impacts identified in the SMWD CEQA documents. The proposed agreement does not impact agricultural resources.

Air Quality: The proposed agreement will have less than significant impact on Air Quality with mitigation, and will not change the impacts identified in the SMWD CEQA documents.

Biological Resources: The proposed agreement will have less than significant impact with mitigation incorporated in Biological Resources and will not change the impacts identified in the SMWD) CEQA documents.

Cultural Resources: The proposed agreement will have less than significant impact on Cultural Resources, and will not change the impacts identified in the SMWD CEQA documents.

Geology and Soils: The proposed Agreement will have less than significant impact on Geology and Soils, and will not change the impacts identified in the SMWD CEQA documents.

Greenhouse Gas Emissions: The proposed agreement will have less than significant impact on Greenhouse Gas (GHG) Emissions, and will not change the impacts identified in the SMWD CEQA documents.

Hazards and Hazardous Materials: The proposed agreement will have less than significant impact on Hazards and Hazardous Materials, and will not change the impacts identified in the SMWD CEQA documents.

Hydrology and Water Quality: The proposed agreement will have a less than significant impact on Hydrology and Water Quality, and will not change the impacts identified in the SMWD CEQA documents.

Land Use and Planning: The proposed agreement will have no impact on Land Use and Planning, and will not change the impacts identified in the SMWD CEQA documents.

Mineral Resources: The proposed agreement will have no impact on Mineral Resources, and will not change the impacts identified in the SMWD CEQA documents.

Noise: The proposed agreement will have a less than significant impact with mitigation on Noise, and will not change the impacts identified in the SMWD CEQA documents.

Population and Housing: The proposed agreement will have no impact on Population and Housing, and will not change the impacts identified in the SMWD CEQA documents.

Public Services: The proposed agreement will have a less than significant impact with mitigation on Public Services, and will not change the impacts identified in the SMWD CEQA documents.

Recreation: The proposed agreement will have a less than significant impact on Recreation, and will not change the impacts identified in the SMWD CEQA documents.

Transportation and Traffic: The proposed agreement will have a less than significant impact with mitigation on Transportation and Traffic, and will not change the impacts identified in the SMWD CEQA documents.

Tribal Cultural Resources: The proposed Agreement will have less than significant on tribal cultural resources, and will not change the impacts identified in the SMWD CEQA documents.

Utilities and Service Systems: The proposed agreement will have a less than significant impact with mitigation on Utilities and Service Systems, and will not change the impacts identified in the SMWD CEQA documents.

Mandatory Findings of Significance: The proposed agreement will have a less than significant impact on Mandatory Findings of Significance, and will not change the impacts identified in the SMWD CEQA documents.

**California Environmental Quality Act
Initial Study & NOD**

Chiquita Water Reclamation Plant Expansion

Follow the link below to view the documents listed above

<https://ceqanet.opr.ca.gov/Project/2013071095>

NOTICE OF DETERMINATION

Print Form

Notice of Determination

Appendix D

To:
Office of Planning and Research
U.S. Mail: Street Address:
P.O. Box 3044 1400 Tenth St., Rm 113
Sacramento, CA 95812-3044 Sacramento, CA 95814
County Clerk
County of: Orange
Address: 333 W. Santa Ana Blvd.
Santa Ana, CA 92701

From:
Public Agency: Santa Margarita Water District
Address: 26111 Antonio Pkwy
Rancho Santa Margarita, CA 92688
Contact: Don Bunts
Phone: 949 459 6602

Lead Agency (if different from above):
Address:
Contact:
Phone:
FILED
FEB 19 2014
HUGH NGUYEN, CLERK-RECORDER

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code. DEPUTY

State Clearinghouse Number (if submitted to State Clearinghouse): SCH 2013071095
Project Title: Chiquita Water Reclamation Plant Phase IV Expansion Project
Project Applicant: Santa Margarita Water District 26111 Antonio Pkwy Rancho Santa Margarita Ca 92688
Project Location (include county): San Juan Capistrano, Orange County

Project Description:
Expansion of the preliminary, primary, secondary, tertiary, treatment process at the Chiquita Water Reclamation Plant up to a average daily flow rate of 10.5 million gallons. The project will also include facilities intended to increase the solids handling capacity of the facility to accommodate the increase in wastewater flows. A biosolids reduction process that may include receiving biosolids from off-site facilities is also contemplated in the project.

This is to advise that the Santa Margarita Water District has approved the above
(Lead Agency or Responsible Agency)
described project on February 14, 2014 and has made the following determinations regarding the above
(date)
described project.

- 1. The project will have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
3. A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
4. Mitigation measures were made a condition of the approval of the project.
5. A mitigation reporting or monitoring plan was adopted for this project.
6. A statement of Overriding Considerations was adopted for this project.
7. Findings were made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, the negative Declaration, is available to the General Public at:
Santa Margarita Water District, 26111 Antonio Pkwy, Rancho Santa Margarita, CA 92688

Signature (Public Agency): Title: Chief Engineer Donald Bunts
Date: February 19, 2014 Date Received for filing at OPR:

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code

Recorded in Official Records, Orange County
Hugh Nguyen, Clerk-Recorder
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POSTED
FEB 19 2014
HUGH NGUYEN, CLERK-RECORDER
DEPUTY

RESOLUTION NO. 2014-02-02

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SANTA MARGARITA WATER DISTRICT ADOPTING A MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PLAN FOR THE PHASE IV EXPANSION OF THE CHIQUITA WATER RECLAMATION PLANT

WHEREAS, the Santa Margarita Water District (“District”) is organized and operates pursuant to California Water Code Sections 34000 *et seq.* and provides water and wastewater services to certain portions of southern Orange County, California; and

WHEREAS, the District’s Chiquita Water Reclamation Plant (“CWRP”) is a 9 million gallon per day (“MGD”) secondary and a 5.5 MGD tertiary treatment facility currently treating wastewater generated mainly from the District; and

WHEREAS, the District must expand the treatment capacity of the CWRP as part of the CWRP Phase IV Expansion Project (“Project”) to accommodate the additional flows from the proposed development within Rancho Mission Viejo, including the influent lift station, screenings removal, grit removal, primary sedimentation, activated sludge, secondary sedimentation, tertiary filtration, tertiary disinfection, biosolids thickening, anaerobic digestion, biosolids dewatering, biosolids reduction processes and the miscellaneous ancillary items associated to these processes; and

WHEREAS, in order to ensure compliance with all current and pending wastewater treatment and water recycling regulations, the District has proposed miscellaneous improvements of the CWRP as part of the Project; and

WHEREAS, the District considers the inclusion of efficient odor control measures as an integral component of the Project and the overall treatment process; and

WHEREAS, the District considers the inclusion of energy production and energy efficient operations as a component of the Project; and

WHEREAS, in its role as lead agency under the California Environmental Quality Act (“CEQA,” Pub. Res. Code, § 21000 *et seq.*), the State CEQA Guidelines (Cal. Code Regs., title 14, § 15000 *et seq.*), and its Local CEQA Guidelines, the District prepared an Initial Study to determine possible environmental impacts of the Project; and

WHEREAS, the Initial Study indicated that all potential environmental impacts from the Project were less than significant or could be mitigated to a level of less than significant, and therefore a Mitigated Negative Declaration (“MND”) (SCH#2013071095) was prepared for the Project pursuant to CEQA, the State CEQA Guidelines, and the Local CEQA Guidelines; and

WHEREAS, the MND was made available to the public, all interested agencies, and the State Clearinghouse for review and comment for 30 days, from July 30, 2013 to September 3, 2013; and

WHEREAS, all other legal prerequisites to the adoption of the Resolution have occurred.

BE IT HEREBY RESOLVED by the Board of Directors of the Santa Margarita Water District (“the Board”) as follows:

1. The MND and Initial Study prepared for the Project contain a complete and accurate reporting of the environmental impacts associated with the Project, and the documents have been completed in compliance with CEQA, the State CEQA Guidelines, and the District’s Local CEQA Guidelines.

2. The MND and Initial Study reflect the independent judgment and analysis of the District.

3. In the District’s role as lead agency, and as the decision-making body for the District, the Board reviewed and considered all of the information contained in the MND, Initial Study, and administrative record, together with all oral and written comments received on the Project.

4. The District finds that there are no circumstances requiring recirculation of the MND pursuant to State CEQA Guidelines § 15073.5. Specifically, the District has incorporated some minor revisions to the MND in response to comments from the public. These minor revisions included additional information to clarify statements, No revisions to the Project were deemed to be necessary as a result of the revisions. Accordingly, the District’s decision not to recirculate the MND is fully supported by substantial evidence in the record.

5. On the basis of the whole record before it, the Board finds that there is no substantial evidence supporting a fair argument that the Project may result in significant environmental impacts, and all environmental impacts of the Project are either less than significant or can be mitigated to a level of less than significant pursuant to the mitigation measures outlined in the MND and the Mitigation Monitoring and Reporting Plan (“MMRP”) prepared for the Project (attached as Exhibit A).

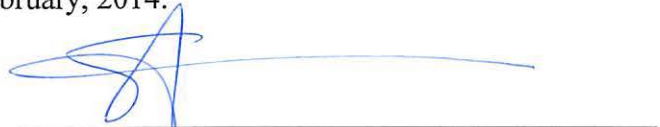
6. The Board hereby approves and adopts the MND for the Project.

7. The Board hereby approves and adopts the MMRP for the Project. To the extent that there are any inconsistencies between the Mitigation Measures set forth in the MND and those contained in the MMRP, the MMRP shall control.

8. The custodian of record for the MND, Initial Study, and the other documents and materials that constitute the record of proceedings on which these findings are based is the District, and its offices are located at: 26111 Antonio Parkway, Rancho Santa Margarita CA 92688.

10. The Board directs and authorizes staff to file a Notice of Determination with the County of Orange and the California Office of Planning and Research within five working days of Project approval.

Passed and Adopted by the Board of Directors of the Santa Margarita Water District at a public meeting this 14th day of February, 2014.



Sandra F. Jacobs
President, Board of Directors
Santa Margarita Water District

Attest:



Joyce Crosthwaite
Secretary, Board of Directors
Santa Margarita Water District

STATE OF CALIFORNIA)

COUNTY OF ORANGE)

SS

I, Joyce Crosthwaite, Secretary of the Board of Directors of the Santa Margarita Water District, do hereby certify that the foregoing Resolution was duly adopted by the Board of Directors said District at a regular meeting held on the 14th day of February, 2014 and that it was so adopted by the following vote:

AYES: DIRECTORS: *JACOBS, OLSON, WILSON, GIBSON,*

NOES: DIRECTORS:

ABSENT: DIRECTORS: *McCusker*

ABSTAIN: DIRECTORS:

Joyce Crosthwaite
Secretary, Board of Directors
Santa Margarita Water District

I, Joyce Crosthwaite, Secretary of the Board of Directors of the Santa Margarita Water District, do hereby certify that the above and forgoing is a full, true, and correct copy of Resolution No. 2014-02-02 of said Board, and that the same has not been amended or repealed.

DATED: February 14, 2014

Joyce Crosthwaite
Secretary, Board of Directors
Santa Margarita Water District

(Seal)



Exhibit A

Mitigation Monitoring and Reporting Plan

MITIGATION PROGRAM

Standard Condition

- SC AQ-1** During construction of the project, SMWD and its contractors shall be required to comply with regional rules, which would assist in reducing short-term air pollutant emissions. The South Coast Air Quality Management District's (SCAQMD's) Rule 402 requires that air pollutant emissions not be a nuisance off site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Two options are presented in Rule 403: monitoring of particulate concentrations or active control. Monitoring involves a sampling network around the project with no additional control measures unless specified concentrations are exceeded. The active control option does not require any monitoring, but requires that a list of measures be implemented starting with the first day of construction.

Mitigation Measures

- MM BIO-1** To the maximum extent practicable, vegetation removal shall not occur during the bird/raptor breeding season (January 15 to September 15). If it is necessary to conduct vegetation removal (or to initiate construction activity) during the California gnatcatcher breeding season (February 15 to September 15) within 500 feet of coastal sage scrub vegetation, a multiple-visit pre-construction survey shall be conducted by a qualified Biologist (i.e., one holding the necessary 10[a] permit to conduct focused surveys for this species) prior to vegetation removal/initiation of construction activity to determine whether coastal California gnatcatchers are present within or adjacent to the impact area. The pre-construction surveys shall also determine whether coastal cactus wrens are present within or adjacent to the impact area. Prior to initiation of vegetation removal/initiation of construction activities, three survey visits shall be conducted at four- to five-day intervals during the two week period prior to vegetation clearing/initiation of construction activities during the breeding season.

If the surveys identify occupied coastal California gnatcatcher/coastal cactus wren habitat, a buffer shall be established between the construction activities and the occupied habitat so that nesting activities are not interrupted. The buffer shall be mapped on construction plans and delineated in the field by temporary fencing. The buffer shall be in effect throughout the remainder of the breeding season or until a qualified Biologist has determined that the coastal California gnatcatcher/coastal cactus wren no longer occupy the protected area (based on a

three-visit focused survey with visits one week apart conducted by a permitted Biologist). The buffer shall be a minimum of 200 feet for coastal California gnatcatcher and 100 feet for coastal cactus wren. The SMWD may consult with the USFWS to discuss a reduced buffer size if localized conditions (e.g., width and type of screening vegetation between the nest and the proposed activity, terrain, existing level of human activity within the buffer and in the surrounding area) warrant a reduced buffer. This condition may be modified by USFWS, CDFW, and/or USACE as part of the permit process for the construction of the berm. The conditions placed on the RMV permit shall apply to the construction of the berm.

- MM BIO-2** Prior to granting an encroachment permit to RMV, evidence shall be presented to SMWD verifying that RMV has coordinated with the resource agencies to modify appropriate permits to include coverage of impacts within SMWD's CWRP property. RMV will be responsible for implementation of any mitigation associated with the permits.

MITIGATION PROGRAM

Standard Conditions and Regulations

- SC CR-1** If human remains are encountered during any excavation or other ground-disturbing work, Section 7050.5 of the *California Health and Safety Code* states that no further disturbances shall occur until the Orange County Coroner has made a determination of origin and disposition pursuant to Section 5097.98 of the *California Public Resources Code*. The Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of being granted access to the site. The MLD may recommend scientific removal and nondestructive analysis of the human remains and items associated with Native American burials.

Mitigation Measures

- MM CR-1** Should any archaeological resources be uncovered during grading or excavation activities, these activities shall be diverted to a part of the site away from the find, and an Orange County-certified Archaeologist shall be contacted by the contractor to (1) ascertain the significance of the resource; (2) establish protocol with the Project Applicant to protect or recover such resources; (3) ascertain the presence of additional resources; and (4) provide additional monitoring of the site, if deemed appropriate.

MM CR-2 Should any paleontological resources be uncovered during grading or excavation activities, these activities shall be diverted to a part of the site away from the find, and an Orange County-certified Paleontologist shall be contacted by the contractor to (1) ascertain the significance of the resource; (2) establish protocol with the Project Applicant to protect such resources; (3) ascertain the presence of additional resources; and (4) provide additional monitoring of the site, if deemed appropriate.

MITIGATION PROGRAM

Mitigation Measures

MM NOI-1 Operation of heavy equipment, trucks, and other noise-generating activities associated with project construction shall be limited to the hours of 7:00 AM to 8:00 PM, Monday through Saturday; there shall be no construction on Sundays or federal holidays.

MM NOI-2 The BRP equipment and facility shall be designed to limit noise such that noise from the BRP, when combined with noise from the other CWRP facilities, does not exceed 55 dBA at any CWRP property line. The BRP design may include the following:

- Equipment may be housed in enclosed structures or below ground galleries.
- Sound enclosures may be included for high noise level equipment.
- Ventilation intake and exhaust for equipment may be placed facing away from sensitive receptors where reasonably possible. Louvers, duct silencers, and other sound attenuation measures may also be included.
- Noise sources with tonal qualities, such as engines, turbines, fans, and blowers, could be of a special design. The design should include noise reductions in the appropriate frequency bands to reduce tonal components of the spectrum to limited levels over the existing minimum hour ambient noise levels in the same band as the tonal source. This will result in very low contribution of tonal sources to the overall noise level and difficulty in discerning the tone, even during the quietest nighttime periods.

BOARD OF DIRECTORS

BETTY H. OLSON, PH.D

CHARLES T. GIBSON

SAUNDRA F. JACOBS

JUSTIN MCCUSKER

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DANIEL R. FERONS
GENERAL MANAGER



Santa Margarita Water District

March 3, 2021

Steve Delson
Gate 5
5270 California Avenue, Suite 200
Irvine, CA 92617

RE: Letter of Commitment for Demonstration Site
EPIC Program Solicitation GFO-20-309

Dear Mr. Delson:


This is a letter of commitment for the project proposal led by Gate 5 to the California Energy Commission under GFO-20-309 entitled "Energy Positive Advanced Primary and Secondary Wastewater Treatment". Santa Margarita Water District (SMWD) provides safe, reliable drinking water, recycled water and wastewater services to over 165,000 residents in eight unique communities in Orange County. As part of our goal to recycle 100% of the District's wastewater, we operate the Chiquita Water Reclamation Facility which processes a typical dry weather flow of 6 million gallons per day (MGD) of wastewater. Prior to filtration and disinfection for water reuse, Chiquita employs a wastewater treatment train including conventional primary treatment and activated sludge secondary treatment. The Chiquita facility is located in the SDG&E IOU service territory.

The District enthusiastically supports Gate 5's proposal to demonstrate advanced primary and secondary treatment and the associated solids recovery system at the Chiquita Water Reclamation Facility. If the grant is awarded, the District commits to providing facility space at Chiquita to site the proposed 1 MGD advanced primary and secondary treatment system associated systems for solids management and energy recovery for the duration of the award through March 2025. In addition to this site commitment, the District will be providing operations and engineering staff support for these systems as an in-kind match, valued at \$250,000-\$300,000 over the duration of the project.

SMWD anticipates many benefits to emerge from this demonstration. Dry weather flow at Chiquita is anticipated to grow to 9.5 MGD at full community build-out, requiring us to increase plant capacity with requisite increases in energy consumption and production of biosolids, which require hauling for land application hundreds of miles away. The proposed technology could help us meet this growing demand in a more compact footprint while extracting net energy and cutting solids hauling by 90%. These aims exemplify our mission to maximize human, environmental, and financial resources for our ratepayers and for the broader community. We are excited to begin work with you on this project to demonstrate an improved method of addressing wastewater treatment and disposal to other utilities and municipalities throughout California.

If you have any questions or comments please don't hesitate to contact me at donb@smwd.com or call (949)459-6602.

Sincerely,
Santa Margarita Water District



Don Bunts
Deputy General Manager

California Environmental Quality Act Supporting Documents

To request a digital copy of the California Environmental Quality Act supporting documents, please email California Energy Commission Agreement Officer Brad Worster at Brad.Worster@energy.ca.gov.

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: GATE 5 ENERGY PARTNERS, INC. - DEMONSTRATION OF
ADVANCED PRIMARY AND SECONDARY WASTEWATER TREATMENT
TECHNOLOGY

WHEREAS, the Santa Margarita Water District is the Lead Agency for “Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology” (hereinafter, “Project”), a proposed project to develop and demonstrate an advanced primary and secondary wastewater treatment with energy-positive solids management, which is within the scope of the Chiquita Water Reclamation Plant Phase IV Expansion Project; and

WHEREAS, the Santa Margarita Water District prepared a Final Initial Study on December 20, 2013, which was revised on February 5, 2014, and a Mitigated Negative Declaration for the Project to evaluate the potential environmental impacts of implementing the Project, copies of which are on file with the California Energy Commission; and

WHEREAS, the Santa Margarita Water District on February 14, 2014, approved and adopted the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Plan for the Project, thereby imposing mitigation measures upon the Project; and

WHEREAS, the Santa Margarita Water District adopted findings required by the California Environmental Quality Act (“CEQA”), and approved the Project, by Adoption of Resolution No. 2014-02-02, a copy of which Resolution is on file with the Energy Commission; and

WHEREAS, the Energy Commission is considering proposed Agreement EPC-20-048, “Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology” (hereafter, “EPC-20-048”), a grant to develop and demonstrate an advanced primary and secondary wastewater treatment with energy-positive solids management; and

Prior to acting on the Agreement EPC-20-048, the Energy Commission desires to make certain findings pursuant to the CEQA Guidelines, title 14, section 15096;

NOW THEREFORE, BE IT RESOLVED:

1. The Energy Commission has reviewed the information contained in the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Plan, that is relevant to its approval of EPC-20-048, and has reviewed the CEQA findings contained in the Santa Margarita Water District's Final Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Plan, which are adopted to the extent that they are relevant to the Energy Commission's decision to approve EPC-20-048.
2. The Santa Margarita Water District has already adopted the mitigation measures recommended in the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Plan and has authority to implement the mitigation measures or to seek any required approvals for the mitigation measures, and the Energy Commission has no direct authority to implement the mitigation measures.
3. The Energy Commission has reviewed and considered the Final Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Plan, and finds that these documents are adequate for its use as the decision-making body for its consideration of EPC-20-048.
4. Approval of EPC-20-048 (Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology) is within the scope of the Chiquita Water Reclamation Plant Phase IV Expansion Project approved by Santa Margarita Water District, and the activities evaluated in the Final Initial Study, Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Plan.
5. Since the Mitigated Negative Declaration was finalized, and adopted on February 14, 2014, there have been no substantial project changes and no substantial changes in the project circumstances that would require major revisions to the Mitigated Negative Declaration, due to the involvement of new significant environmental effects or an increase in the severity of previously identified significant impacts, and there is no new information of substantial importance that would change the conclusion set forth in the Mitigated Negative Declaration.
6. The Energy Commission has not identified any feasible alternative or additional feasible mitigation measures within its power that would substantially lessen or avoid any significant effect the Demonstration of Advanced Primary and Secondary Wastewater Treatment Technology would have on the environment.

THEREFORE BE IT RESOLVED, that the Energy Commission finds, on the basis of the entire record before it, that the mitigation measures incorporated in the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Plan will prevent EPC-20-048 from having any significant environmental impacts; and

BE IT FURTHER RESOLVED, that the Energy Commission approves Agreement EPC-20-048 with Gate 5 Energy Partners, Inc., for \$1,603,779; and

BE IT FURTHER RESOLVED, that this document authorizes the Executive Director or his or her designee to execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the CEC 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 CEC held on June 9, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Patricia Carlos
Secretariat