

**To:** Office of Planning and Research  
PO Box 3044  
1400 Tenth Street, Room 113  
Sacramento, CA 95812-3044

**From:** California Energy Commission  
1516 Ninth Street, MS-48  
Sacramento, CA 95814

**Project Applicant:** MicroBio Engineering, Inc.

**Project Title:** Improving Energy Efficiency and Performance of Wastewater Recycling

**Project Location:**

Address	City	County
35 Prado Rd	San Luis Obispo, 93401	San Luis Obispo
1 Grand Ave	San Luis Obispo, 93407	San Luis Obispo
8668 Pinewood St.	Delhi, 95315	Merced
1347 Shane Lane	Templeton, 93465	San Luis Obispo

**Description of Nature, Purpose and Beneficiaries of Project:**

The objective of the proposed project is to advance the science and engineering of algae wastewater treatment systems, to enable current and future California wastewater plants to reduce net electricity consumption while improving plant performance and lower overall costs. The RNEW® (Recycle Nutrients Energy and Water) process, being further developed by the present project, follows-up on prior and recent research supported by the US DOE, and would be applied to new, or retrofitted to existing, wastewater treatment plants. The technological and scientific knowledge being advanced by this project are the controlled operation of intensive high-rate algal ponds for year-round wastewater treatment. This includes low-cost harvesting of the algal biomass by a combined algal settling and membrane separation for recovery of energy, fertilizers and reclaimed water. The primary market that will be impacted by the RNEW® technology will be the water/wastewater treatment markets. California IOU ratepayers will benefit from annual electric power savings, lower costs for wastewater treatment, and reduced environmental impacts overall, including from electricity generation. Additionally, algal wastewater treatment benefits local communities by reducing odors typically produced by conventional wastewater treatment. In addition, the low profile and reduced need for machinery improves the aesthetics of the facility.

**Name of Public Agency Approving Project:** California Energy Commission

**Name of Person or Agency Carrying Out Project:** MicroBio Engineering, Inc.

**Exempt Status: (check one)**

- Ministerial Exemption (Pub. Resources Code § 21080(b)(1); Cal. Code Regs., tit 14, § 15268);
- Declared Emergency (Pub. Resources Code § 21080(b)(3); Cal. Code Regs., tit 14, § 15269(a));
- Emergency Project (Pub. Resources Code § 21080(b)(4); Cal. Code Regs., tit 14, § 15269(b)(c));
- Categorical Exemption. State type and section number  
Cal. Code Regs., tit 14, § 15301, Cal. Code Regs., tit 14, § 15303
- Statutory Exemptions. State code number.
- Common Sense Exemption. (Cal. Code Regs., tit 14, §15061(b)(3))

**Reasons why project is exempt:**

Authority cited: Sections 21083 and 21110, Public Resources Code. Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

For Cal. Code Regs. (CCR), Title 14, Section 15301: This project will demonstrate algal wastewater treatment and reuse of nutrients at three existing wastewater treatment facilities. All three facilities currently house wastewater treatment equipment and have hosted previous experiments for algal wastewater treatment. The RNEW® technology to be installed and operated is expected to integrate with the existing piping equipment at all three sites as a beneficial add-on for efficient wastewater treatment.

The technologies to be installed at the San Luis Obispo Water Resource Recovery Facility will include between four to six raceway ponds approximately 3.5 square meters each; one denitrification tank with approximately a 50 to 200 gallon capacity; and a membrane skid station with a footprint of approximately seven feet by five feet. The ponds and tank will be permanently installed at the San Luis Obispo Water Resource Recovery Facility for future research.

At the Delhi County Water District Wastewater Treatment Facility, the following will be installed for operation with the existing 3.5-acre raceway pond: a brush aerator, a paddle wheel motor, a gearbox and a variable frequency drive. The new equipment will be used in operation with the existing 3.5-acre raceway pond to demonstrate nitrification at full scale.

The technology to be installed at the Templeton Community Services District Wastewater Treatment Plant will include a membrane skid station with a footprint of approximately seven feet by five feet. The membrane filter skid will be temporarily installed at the Templeton site, and will be removed after completion of the project.

Replacement of existing motors and pumps, as well as reconfiguration of existing piping, may occur to facilitate the applied research testing. This project will not result in expanded capacity at any of the three wastewater treatment sites. The work will involve basic data collection at the three existing wastewater treatment facilities and a fourth site at Cal Poly San Luis Obispo for computer-based laboratory water quality analysis to determine the system performance. 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.

For Cal. Code Regs. (CCR), Title 14, Section 15303: This project will install limited numbers of new, small structures appurtenant to three existing wastewater treatment facilities.

The technologies to be installed at the San Luis Obispo Water Resource Recovery Facility will include between four to six raceway ponds approximately 3.5 square meters each; one denitrification tank with approximately a 50 to 200 gallon capacity; and a membrane skid station with a footprint of approximately seven feet by five feet. The ponds and tank will be permanently installed at the San Luis Obispo Water Resource Recovery Facility for future research.

At the Delhi County Water District Wastewater Treatment Facility, the following will be installed for operation with the existing 3.5-acre raceway pond: a brush aerator, a paddle wheel motor, a gearbox and a variable frequency drive. The new equipment will be used in operation with the existing 3.5-acre raceway pond to demonstrate nitrification at full scale.

The technology to be installed at the Templeton Community Services District Wastewater Treatment Plant will include a membrane skid station with a footprint of approximately seven feet by five feet. The membrane filter skid will be temporarily installed at the Templeton site, and will be removed after completion of the project.

Additional minor modifications may be made to existing facilities, including replacement of existing motors and pumps, as well as reconfiguration of existing piping. 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.

**Lead Agency**

**Contact Person:** Benson Gilbert **Area code/Telephone/Ext:** 916-445-5406

**If filed by applicant:**

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project?  Yes  No

Authority cited: Sections 21083 and 21110, Public Resources Code. Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

2019038203

Signature: Benson Gilbert

Date: 3-6-2019

Title: Associate Energy Specialist

Signed by Responsible Agency

Signed by Lead Agency

Signed by Applicant

Date received for filing at OPR: Governor's Office of Planning & Research

MAR 11 2019

STATE CLEARINGHOUSE

