

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: California Custom Processing, LLC

Project Title: California Custom Processing Solar Steam Boiler

Project Location – Specific: 3211 Aviation Drive

Project Location – City: Madera 93637 Project Location – County: Madera

Description of Nature, Purpose and Beneficiaries of Project:

The purpose of this project is to install a Sunvapor solar boiler system at the existing California Custom Processing (CCP) facility to reduce use of its natural gas boilers, thereby reducing its greenhouse gas (GHG) emissions and fuel costs. CCP is a certified organic processor of raw almonds, and the plant uses steam instead of chemicals for blanching, scalding, pasteurizing, and slicing almonds. The project will involve installing six Sunvapor SPTC-10™ parabolic trough solar collector arrays in parallel loops on approximately 4.0 acres of vacant land adjacent to the north side of the existing CCP facility. The area for the solar collectors is sufficiently flat so that site grading will not be required; the height of the foundations supporting the collectors will be adjusted to compensate for surface variations in specific areas. The parabolic trough collectors will track the sun along a horizontal axis to maximize energy yield. At maximum rotation, the collectors will stand approximately 15.8 feet tall, and will be close to 19 feet wide at their tops. A fire road will be constructed along the perimeter of the CCP property and around the solar collector field, and a fire hydrant will be installed at the north side of site. Electrical power and signal conduits will be installed in trenches within the collector field boundaries. Sunvapor has designed a process using pressurized water as the heat transfer fluid instead of thermal oil. The heat from the closed thermohydraulic circuit is transported to the supply side of the unfired steam generator (USG) heat exchanger that will be installed inside the boiler room within the existing CCP building. A pair of parallel collector water pipes will be installed above grade to run between the solar collector field and the boiler room. A wind fence will be installed along the periphery of the collector field. In addition to the USG, a collector water circulation pump and electric motor, master controller, and expansion tank will be installed inside the boiler room. At peak sun conditions, the solar boiler will provide 100 percent of the plant’s steam load, thereby becoming a zero-emissions facility. Solar steam will take priority during off-peak conditions, with natural gas boilers providing auxiliary steam. Production will be shifted to daytime hours to minimize use of natural gas. With an estimated annual yield of 147,327 therms, the solar boiler will generate at least 40 percent of the plant’s annual process heat demand. The estimated net GHG reduction is 774 million tons per year. The calculated fuel cost savings is \$102,935 per year. The NOx emissions reduction is calculated to be 717.7 pounds per year. The project is consistent with the California Energy Commission (CEC) mission of leading the state to a 100 percent clean energy future.

Name of Public Agency Approving Project: California Energy Commission

Name of Person or Agency Carrying Out Project: California Custom Processing, LLC

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, §§ 15303 (Class 3) and 15311 (Class 11)

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

- Statutory Exemptions. State code number.
- Common Sense Exemption. (Cal. Code Regs., tit 14, § 15061(b)(3))

Reasons why project is exempt:

The parabolic trough solar collector arrays will be installed on the north half of the CCP property, which is a single 8.49-acre parcel (APN 013-200-014). The City of Madera (City) will require the applicant to satisfy its requirements to obtain a ministerial building permit for the proposed installation; there is no requirement for a local discretionary permit for this project.

Environmental Analysis: The north half of the property is disused, vacant land. Because this approximately 4.0-acre portion of the property is undeveloped, key staff in the CEC Siting, Transmission, and Environmental Protection (STEP) Division evaluated the site and reviewed survey reports and other documents to determine whether the proposed project could potentially cause any significant impacts to occur. The California Environmental Quality Act (CEQA) Guidelines specify exceptions to a categorical exemption. For certain exemption classes, including Classes 3 and 11, project location must be considered to determine whether “a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant” (Cal. Code Regs., tit 14, §15300.2(a)). In evaluating whether a significant effect will occur, “[a] categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances” (Cal. Code Regs., tit 14, §15300.2(c)). The project is not located in a sensitive environment, nor are any unusual circumstances identified that could lead to a reasonable possibility of a significant effect occurring with project implementation. Another exception is specified for a project which may cause “a substantial adverse change in the significance of a historical resource” (Cal. Code Regs., tit 14, §15300.2(f)). As discussed below, the project will not have a significant effect on historical resources. The following subsections summarize the results of the analyses conducted for the project:

Biological Resources: The approximately 4.0-acre site shows evidence of grading and topsoil removal. Very little vegetation is present on site with approximately 10 percent covered with primarily non-native vegetation. Land immediately north, east, and west of the site is dominated by wild oats (*Avena* spp.), wild radish (*Raphanus raphanistrum*), and wheat (*Triticum aestivum*). Botanical (including wetlands) and wildlife surveys were conducted on April 20, 2020. Wildlife surveys noted the presence of savannah sparrow (*Passerculus sandwichensis*), mourning dove (*Zenaida macroura*), Eurasian collared dove (*Streptopelia decaocto*), and killdeer (*Charadrius vociferous*). One small mammal burrow was present, and given its size and orientation is likely used by a California vole (*Microtus californicus*). No special-status plant or wildlife species or jurisdictional wetlands were observed during surveys and none are expected to occur on the site. Therefore, the project would cause no adverse impacts on biological resources.

Glint and Glare Effects on Airport Operations: The Sunvapor parabolic trough solar collector arrays will be located within the Airport Influence Area of the Madera Municipal Airport, which has two runways. Runway 12/30 is 5,545 feet long, and Runway 8/26, which is no longer operational, is 3,702 feet long. The airport has no airport traffic control tower. The landing threshold for Runway 12/30 is 2,147 feet from the closest point of the solar collector array field. The *Madera Countywide Airport Land Use Compatibility Plan* (ALUCP) (adopted September 29, 2015) shows that the solar collector array field is within Compatibility Zone D, Other Airport Environs; “light industrial, high intensity” uses, including food products preparation, are considered “normally compatible” uses in Compatibility Zone D. The ALUCP defines the risk level as “low” for Compatibility Zone D.

Mr. Darrell Unruh, Interim Planning Manager for the City, acknowledged in a March 16, 2020, e-mail to the Madera County Airport Land Use Commission (ALUC) staff that he would appreciate receiving any information or direction resulting from the ALUC’s review of the parabolic trough solar collectors and assessment of the project’s compatibility with airport operations. On April 14, 2020, Mr. Robert Mansfield, Senior Planner with the ALUC, provided a project compatibility review letter to Sunvapor, documenting its conclusion that a hearing by the full ALUC is not needed for the project. The letter includes a recommendation by ALUC staff that the City add conditions to the building permit for the project, paraphrased by staff as follows: 1) Comply with Federal Aviation Administration (FAA)

guidelines regarding solar arrays near airports. 2) Ensure that no component of operations of the facility will cause or create electrical interference with aircraft communications or navigation. 3) Ensure that no component of operations of the facility will cause or create any visual or other sensory distractions to aircraft landing or taking off from the airport. Mr. Unruh's e-mail demonstrates the City's intention to include the ALUC's recommended conditions in the building permit that will be issued for the project.

Because of the location of the solar collector arrays relative to the airport's runway landing threshold, Sunvapor conducted a study and prepared a report titled, *Potential Ocular Impact of the Proposed Solar Steam Project at CCP*, which was presented to CEC staff on April 14, 2020. The analysis adheres to the FAA Standard for Measuring the Ocular Impact of solar energy systems published in the Federal Register/Vol. 78, No. 205, October 23, 2013. According to this FAA Standard, to demonstrate that the system will not result in an ocular impact that compromises the safety of the air transportation system, it is necessary and sufficient to show for an airport that has no airport traffic control tower, that there is a "low potential for after-image" along the final approach path for any existing landing threshold. The study's key conclusion is that the proposed solar boiler system will not cause an ocular impact that could compromise the safety of the air transportation system, a conclusion that applies to both airport runways.

Mr. Geoff Lesh, Manager of the STEP Division's Engineering Office, reviewed Sunvapor's report. Although Mr. Lesh did not attempt to replicate the results, he found the methodology and criteria used to be straight forward and appropriate, and the sources cited and the author's credentials to be strong. Mr. Lesh considers the report's conclusion to be credible, which states that the "worst-case glint produced by the CCP project is shown in the plot to be below the threshold to cause an after-image." Mr. Lesh had no follow up questions concerning Sunvapor's study methods or results.

Staff considered the ALUC's compatibility review of the project and conclusion that a hearing by the full ALUC was not needed for the project. Staff also considered the analysis conclusion presented in the Sunvapor study, that there is a "low potential for after-image" along the final approach path for any existing landing threshold. Based on the ALUC compatibility review letter and the analysis results in the Sunvapor study, staff conclude that the project would cause no adverse impacts relating to the effects of glint and glare on airport operations.

Historical Resources: As defined in Section 15064.5(a) of Title 14 of the California Code of Regulations, historical resources include sites, objects, buildings, structures, manuscripts, areas, and places that meet significance criteria defined in CEQA. These sorts of resources, whether significant or not, are commonly referred to as cultural resources. A review of official records of previous cultural resource studies and known cultural resources on the project site and vicinity (dated April 20, 2020) indicates that no known cultural resources exist on the project site. One previous cultural resource study encompassed the project site but did not include a field inspection of the site. Nevertheless, the records review suggests little likelihood that historical resources are located on the project site. As noted in the subsection above, "Biological Resources," the project site's topsoil has been removed and graded. These actions would probably have removed any cultural resources situated on the ground surface of the project site. Neither are buried cultural resources, such as California Native American archaeological sites, expectable at the project site; the previous cultural resources study indicates that the project site rests on a geological formation that is more ancient than the oldest human occupation of the Central Valley. The historical resources exception for categorical exemption does not apply to the proposed project because it would not cause a substantial adverse change in the significance of a historical resource (Cal. Code Regs., tit 14, § 15300.2(f)).

Soil and Water Resources: Project construction would disturb about 0.02 acre of soil at the locations for the solar collector support foundations and trenching for electrical conduit. This level of soil disturbance would not cause a significant risk to surface water quality through erosion or sedimentation. The project also is not expected to need coverage under the State Water Resources Control Board's Construction General Permit for storm water discharges because construction-related ground disturbance is under 1.0 acre. Wastewater discharge from the proposed project, during operation, is not expected to change. The project would not cause a significant effect on water quality.

The project would use potable water supplied by the City. During operations the project is expected to require about 6,500 gallons annually for mirror washing. And, the project will require 1,000 gallons

during project commissioning to fill the hydronic heating system. This proposed water use is minimal and cannot reasonably be reduced. The project would not cause a significant effect on water supplies.

Categorical Exemptions: An exemption for a Class 3 project provides for construction and location of limited numbers of new, small facilities or structures and installation of small new equipment and facilities in small structures. “The numbers of structures described in this section are the maximum allowable on any legal parcel” (Cal. Code Regs., tit 14, § 15303). Installation of a Sunvapor solar boiler system at the existing CCP facility property is an allowable use on the land parcel. The property is in an area designated as Industrial on the *City of Madera General Plan Land Use Map*. The installation will be within an approximately 4.0-acre area on the CCP facility property, and the solar boiler system will only serve the existing plant’s steam load. The new boiler room equipment will be installed in a relatively small area within the existing CCP facility. Staff conclude that the project will not cause significant effects on the environment due to unusual circumstances, nor is the project site located in a sensitive environment. The project will not cause a substantial adverse change in the significance of a historical resource. Therefore, the project is categorically exempt under Section 15303 of Title 14 of the California Code of Regulations.

An exemption for a Class 11 project provides for construction or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities (Cal. Code Regs., tit 14, § 15311). The Sunvapor solar boiler system involves construction and placement of equipment that is directly appurtenant to CCP’s industrial process operations. Likewise, the new boiler room equipment is appurtenant to the existing facility. The installation is limited to an approximately 4.0-acre area adjacent to the existing CCP facility. As described above, the project will not cause significant effects on the environment due to unusual circumstances, nor is the project site located in a sensitive environment. The project will not cause a substantial adverse change in the significance of a historical resource. Therefore, the project is categorically exempt under Section 15311 of Title 14 of the California Code of Regulations.

Each exemption is an independent basis for finding the project exempt.

Lead Agency

Contact Person: Kaycee Chang **Area code/Telephone/Ext:** 916-327-1509

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

Signature: kchang **Date:** 06/30/2020 **Title:** Energy Analyst

Signed by Responsible Agency

Signed by Lead Agency

Signed by Applicant

Governor’s Office of Planning & Research

Jul 03 2020

Date received for filing at OPR: STATE CLEARINGHOUSE