





California Energy Commission

STAFF REPORT

Localized Health Impacts Report

Projects Awarded Funding Under Solicitation GFO-22-608 Ultra-Low-Carbon Fuel: Demonstration- and Commercial-Scale Production Facilities Utilizing Forest Biomass

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PREFACE

This Localized Health Impacts Report (LHI Report) assesses the local health impacts from projects proposed to receive Clean Transportation Program (CTP) or similar funding. Preventing or minimizing health risks from pollution is vital in any community, but especially in those that are at high risk due to preexisting poor air quality and other factors. Environmental justice (EJ) communities, low-income communities, and minority communities are considered the most impacted by any project that could increase air pollution. Therefore, they are considered "high-risk communities." This LHI Report:

- Identifies proposed projects located in high-risk communities.
- Analyzes the potential health impacts to communities from project-related emissions or pollution, based on information submitted by the project awardees.
- Describes the plans for community outreach for each project.

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), which created the CTP, also directed the California Air Resources Board (CARB) to develop guidelines to ensure the CTP improves air quality. CARB's *AB 118 Air Quality Guidelines*, approved in 2008, are published in the California Code of Regulations (CCR), Title 13, Motor Vehicles, Chapter 8.1. Those guidelines require the CEC to issue LHI Reports (13 CCR Section 2343):

- "(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:
- "(A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.
- "(B) Projects must be selected and approved for funding in a publicly noticed meeting."

In addition, the CEC issues LHI Reports for certain projects that are similar to CTP projects but do not receive CTP funding.

The CEC publishes this LHI Report at least 30 days before approving projects at a publicly noticed meeting. This report includes projects that may require a conditional-use permit, discretionary permit, or California Environmental Quality Act (CEQA) review. The CEC interprets "permits" to suggest discretionary and conditional-use permits, because they require a review of potential impacts to communities and the environment before issuance. Since ministerial-level permits do not review public health—related pollutants, CEC staff does not assess projects requiring only ministerial-level permits in this report.

ABSTRACT

This Localized Health Impacts Report describes the potential health impacts to communities from projects seeking California Energy Commission (CEC) funding under Grant Solicitation GFO-22-608. This grant initiative seeks to support ultra-low-carbon fuel in two funding categories: demonstration-scale, and commercial-scale production facilities utilizing forest biomass. Under California Code of Regulations Title 13, Section 2343, this report is available for public comment for 30 days before projects can be approved at a publicly noticed business meeting.

CEC staff has proposed two projects for Clean Transportation Program or similar grant funding awards under Solicitation GFO-22-608. Each of these projects has one location. Based on project site information provided by the awardees, both communities, Fresno and Oroville, where these projects are located are considered high-risk communities. Community members near the proposed project sites may be at a higher risk of adverse health impacts from pollution. However, staff does not anticipate a net increase in the pollution burden for the communities where these projects are located.

Keywords: Air pollution, California Air Resources Board (CARB), Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), localized health impacts (LHI)

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EXECUTIVE SUMMARY

The California Energy Commission's (CEC's) Clean Transportation Program provides funding to support innovation and accelerate the development and implementation of advanced transportation and fuel technologies. The CEC also provides funding from programs that are similar to but separate from the Clean Transportation Program. An example of a similar program is the funding described in Section 74 of the Budget Act of 2021 (Senate Bill 129, Skinner, Chapter 69, Statutes of 2021).

Under California Code of Regulations Title 13, Section 2343, this Localized Health Impacts Report describes the ultra-low-carbon fuels production projects proposed for funding that may require certain kinds of permits or environmental review. The CEC is required to assess the local health impacts of projects proposed for Clean Transportation Program funding.

This report focuses on how project-related emissions or pollution could affect community health. Environmental justice communities, low-income communities, and minority communities are at higher risk of harm from pollution. Project locations in these communities are considered "high-risk community project locations." CEC staff identifies high-risk communities using a combination of demographic and environmental data. Environmental data for air quality come from the California Air Resources Board. Demographic data are from the U.S. Census Bureau and the California Employment Development Department.

CEC staff proposes two projects for Clean Transportation Program or similar grant funding awards under Solicitation GFO-22-608, titled "Ultra-Low-Carbon Fuel: Demonstration- and Commercial-Scale Production Facilities Utilizing Forest Biomass." This initiative seeks to support ultra-low-carbon fuels that reduce greenhouse gas (GHG) emissions, decrease air pollution, prevent wildfire, and help achieve the state's climate change and clean air goals. Staff analyzed localized health impact information submitted by the project awardees. Based on project site information provided by the awardees, both communities where proposed projects are located are considered high-risk. Community members near the proposed project sites may be at a higher risk of negative health impacts from pollution. However, staff does not anticipate a net increase in the pollution burden for the communities where these projects are located. Instead, staff expects the projects to reduce pollution levels.

CHAPTER 1: Projects Proposed for Funding

Background

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007) created the Clean Transportation Program (CTP). AB 118, amended by AB 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the CEC to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." AB 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the CTP to January 1, 2024.

On February 03, 2023, the CEC released a competitive grant solicitation titled "Ultra-Low-Carbon Fuel: Demonstration- and Commercial-Scale Production Facilities Utilizing Forest Biomass" (GFO-22-608). GFO-22-608 offered CTP grant funding for projects that support ultra-low-carbon fuel in two funding categories: demonstration-scale and commercial-scale production facilities using forest biomass. This solicitation aims to support ultra-low-carbon fuels that reduce greenhouse gas (GHG) emissions, decrease air pollution, prevent wildfires, and help achieve the state's climate change and clean air goals.

Projects Selected

On June 21, 2023, the CEC posted a notice of proposed awards (NOPA)¹ identifying the 2 projects awarded grant funding under GFO-22-608. This LHI Report assesses the locations of each of those projects. <u>Table 1</u> lists the proposed project location for each of the awardees and their corresponding environmental justice (EJ) indicators. EJ indicator definitions are in Chapter 3 of this LHI Report, and EJ indicator analysis is in <u>Table 3</u>.

Table 1: Project Details with EJ Indicators

Proposed Awardee	Project Title	Project Location	EJ Indicator(s)
California Grinding Inc	Fresno Forest Waste to Fuel Project	3077 S Golden State Frontage Rd, Fresno, CA 93725	Age, Minority, Poverty, Unemployment
Yosemite Clean Energy, LLC	Yosemite Clean Energy Paradise Biomass to Carbon Negative Biofuels Plant	1000 Cal Oak Rd, Oroville, CA 95965	Age, Poverty, Unemployment

Source: CEC staff

Funding for these projects is contingent upon approval at a publicly noticed CEC business meeting and execution of a grant agreement.

¹ Piper, Kevyn. 2023. "Notice Of Proposed Awards." California Energy Commission. Accessed July 10, 2023. <u>Cover Letter and Results Table</u> available at https://www.energy.ca.gov/sites/default/files/2023-06/GFO-22-608_NOPA_Cover_Letter_and_Results_Table_2023-06-21_ada.docx.

Public Comment

As provided by Title 13 of the CCR, Section 2343, a 30-day public review period applies to this LHI Report from the date it is posted on the CEC website. The <u>original posting date for this report</u> is at https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/localized-health-impacts-reports.

The CEC encourages comments by email. Please include your name or your organization's name in the name of the file. Send comments in either Microsoft® Word format (.doc) or Adobe® Acrobat® format (.pdf) to FTD@energy.ca.gov.

A hard copy can be mailed to:

California Energy Commission Fuels and Transportation Division 715 P Street, MS-44 Sacramento, CA 95814-5512

All written comments will become part of the public record and may be posted to the Internet. News media should direct inquiries to the Media and Public Communications Office at 916-654-4989 or by email at mediaoffice@energy.ca.gov.

CHAPTER 2: Project Descriptions

As part of the GFO-22-608 process for selecting projects, applicants must provide LHI information for their proposed project and location. This information includes the expected impact of the project on local communities and the outreach efforts the applicant has made to engage disadvantaged communities or other local communities. This chapter summarizes that information submitted by the awardees. The awardees identify disadvantaged communities using the CalEnviroScreen² screening tool developed by the Office of Environmental Health Hazard Assessment.

Note: Applicants use different methods for estimating emissions reductions, so estimates may vary significantly between similar projects.

California Grinding Incorporated (CGI)

California Grinding Incorporated's proposed project, "Fresno Forest Waste to Fuel (FW2F) Project," will commission a renewable gasification energy facility that will convert forestry residues and approved biomass feedstocks to produce renewable compressed natural gas (RCNG) as part of its Fresno Renewable Energy System (FREES). The project will use VERDE Technologies' predigestion process and anaerobic digestion (AD) to produce RCNG for use as transportation fuel. The project is in an existing company-owned green waste processing plant in an industrially zoned area.

Local truck traffic on the roadways near the facility is expected to increase from forest waste delivery. However, wastes generated on site at the FREES facility that would normally be transported to landfills or compost sites will be used as feedstock for the FW2F project thereby reducing out going truck traffic between the facility and landfills. Net increase in traffic is projected to be about one additional truck trip per day. The project will adhere to all applicable air district regulations set forth by San Joaquin Valley Air Pollution Control District (SJVAPCD). Estimated emissions from the project's biomass gasification and AD process do not exceed the SJVAPCD threshold of significance for toxic air contaminants as outlined in Table 2 below.

2 This tool ranks U.S. Census tracts based on geographic, socioeconomic, public health and environmental hazard criteria. See "<u>CalEnviroScreen</u>." Office of Environmental Health Hazard Assessment. Accessed July 15, 2023. Available at https://oehha.ca.gov/calenviroscreen.

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Table 2: Operational Emissions of FW2F (or FREES) Facility (tons/year)

Pollutant	ROG	NOx	СО	SO2	VOC	PM-10
Project Estimate Emissions	0.9	9.5	5.8	6.5	3.3	0.9
SJVAPCD Threshold of Significance	10	10	100	27	-	15
Project Emissions Exceeds SJVAPCD Threshold?	No	No	No	No	No	No

Source: California Grinding Incorporated

Outreach methods will include a program of newsletters/flyers/educational materials for surrounding communities to grow the healthy, working relationship with surrounding businesses. CGI will work with local community-based organizations (CBO) to identify the educational needs and regularly distribute educational flyers about recycling and composting. On a monthly basis, or as frequent as deemed necessary, CGI will distribute a facility-related newsletter, including hiring and training opportunities, to surrounding communities. CGI plans to find partner organizations within local CBOs, such as the Malaga Community Park & Recreation Center, Malaga Elementary School, Calwa Elementary School, and the Calwa Recreation & Park District to form long-lasting relationships. Depending on responsiveness and opportunity, CGI will expand its outreach and arrange, or fund services, to improve parks, school lawns, playgrounds, and picnic areas.

Yosemite Clean Energy, LLC

Yosemite Clean Energy, LLC's (Yosemite) proposed project, "Yosemite Clean Energy Paradise Biomass to Carbon Negative Biofuels Plant" will install a 50-megawatt forest waste biomass to green hydrogen plant in Oroville, California. The project will process 90,000+ bone dry tons (BDT) of forest and farm waste biomass annually through the management of up to 5,000 forest acres and generate more than 6.2 million diesel gallon equivalents (DGE) annually of renewable green hydrogen, effectively removing 104,076 metric tons (MT) of carbon dioxide CO₂ from the atmosphere annually.

Plant operation after construction will add a daily ingress of 20-30 truckloads of biomass and an egress of 25-30 truckloads of product. Emissions from green hydrogen powered trucks transporting these materials would be zero. Annually, Yosemite estimates the plant will emit less than 10 tons of nitrous oxide (NO_x), less than 5 tons of sulfur oxide (SO_x), and less than 10 tons of volatile organic compounds (VOCs), which is within Butte County Air Quality Management District's (BCAQMD's) thresholds. BCAQMD has provided two pre-evaluation letters expressing its assessment that the project will meet air quality requirements.

Outreach methods will include continued collaboration with CBOs, including Butte County Fire Safe Council, Oroville City Council, the Butte County Board of Supervisors, and Mooretown Rancheria, to understand community needs and effectively engage with community members. Yosemite will hold additional meetings to hear from community stakeholders, present project benefits (air quality, economic, environmental, and fire hazard reduction), and present opportunities for community involvement and investment. Yosemite will make the company

introduction, project profile, and statement of qualifications widely available for community viewing. The city fire marshal has expressed positive support and no safety concerns for the project, and Yosemite will continue to communicate safety information regarding the project to the local community.

CHAPTER 3: Location Analysis

This LHI Report identifies projects located in high-risk communities, using staff's adaptation of the Environmental Justice Screening Method (EJSM).³ High-risk communities are those with social vulnerability indicators, high exposure to pollution, and greater health risks. This LHI Report is not intended to be a detailed pollution analysis of proposed projects, nor is it intended to substitute for the environmental review conducted during CEQA.

CEC staff identifies high-risk community project locations using data from the California Air Resources Board (CARB), the U.S. Census Bureau, and other public agencies. The data are analyzed to assign EJ indicators for each project location specified in the LHI Report. The proposed project location must meet a two-part environmental and demographic standard to be considered in a "high-risk community."

Part 1: Environmental Standard

Communities meet the environmental standard if they have a high concentration of air pollutants. These pollutants include ozone, particulate matter 2.5 microns in diameter or smaller ($PM_{2.5}$), or particulate matter 10 microns in diameter or smaller (PM_{10}). The environmental standard uses CARB air quality monitoring data on nonattainment⁴ status for these pollutants.

Using 2022 data,⁵ all projects are in communities that meet the environmental standard, since they are within a nonattainment zone for ozone, PM_{2.5}, or PM₁₀. This finding indicates that there may be existing poor air quality where the proposed projects are located.

Part 2: Demographic Standard

Communities meet the demographic standard if they have two or more EJ indicators for minority, age, poverty, and unemployment. Staff defines the EJ indicator thresholds as:

- 1. A minority subset represents more than 30 percent of a given city's population.
- 2. The percentage of people living in a city who are younger than 5 years of age, or who are 65 years of age or older, is more than 1.2 times (more than 20 percent higher than) the state average for those age categories.

³ Pastor Jr., Manuel (University of Southern California), Rachel Morello-Frosch (University of California, Berkeley), and James Sadd (Occidental College). 2010. *Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making*. California Air Resources Board. Accessed August 3, 2023. Available at

https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/04-308.pdf.

⁴ A *nonattainment* area is a geographic area that does not meet the Ambient Air Quality Standards (state, national, or both) for a given pollutant. See "<u>Maps of State and Federal Area Designations</u>." California Air Resources Board. Accessed July 15, 2023. Available at https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

- 3. A city's poverty rate exceeds the state average poverty rate.
- 4. The city (or county if city data are unavailable) unemployment rate exceeds the state average unemployment rate.

The demographic standard uses the U.S. Census Bureau's American Community Survey fiveyear estimates⁶ on race, ethnicity, age, and poverty, and the California Employment Development Department's monthly data⁷ on unemployment. Specifically, this LHI Report uses city-level⁸ unemployment data. Unemployment data are not seasonally adjusted.

Both communities where these projects are located meet the demographic standard, since they exceed the threshold for two or more EJ indicators (<u>Table 3</u>).

Analysis Results

Staff finds that both communities where these projects are located meet the criteria for high-risk communities since they meet both the environmental and demographic standards. In Table 3, a **bold** number followed by an asterisk (*) indicates categories that exceed a given EJ indicator threshold. A city/county name in **bold**, followed by a dagger (†), indicates a high-risk community.

Table 3: EJ Indicators by Project Location City Demographic

Site Location	American Indian and Alaska Native (2021)	Asian (2021)	Black or African American (2021)	Hispanic or Latino (Any Race) (2021)	Native Hawaiian and Pacific Islander (2021)	Under 5 Years of Age (2021)	65 Years of Age and Over (2021)	Below Poverty Level (2021)	Unemploy- ment (May 2023)
California	0.9%	14.9%	5.7%	39.5%	0.4%	6.0%	14.4%	12.3%	4.5%
EJ Indicator Threshold	30%	30%	30%	30%	30%	7.2%	17.3%	12.3%	4.5%
Fresno†	1.2%	14.2%	6.8%	50.0%*	0.2%	7.7%*	11.6%	22.9%*	5.6%*
Oroville†	2.1%	13.0%	5.0%	14.9%	0.3%	8.5%*	15.4%	21.2%*	6.1%*

Sources: CEC staff, Employment Development Department, and U.S. Census Bureau

⁶ American Community Survey codes DP05 and S1701 were used to find data. See "Explore Census Data." U.S. Census Bureau. Accessed July 20, 2023. Available at https://data.census.gov.

⁷ Overview page with data from most recent and previous months: "<u>Unemployment Rate and Labor Force</u>." Employment Development Department. Accessed July 20, 2023. Available at https://labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html.

⁸ Most recent data only: "Monthly Labor Force Data for Cities and Census Designated Places (CDP)." Employment Development Department. Accessed July 20, 2023. Available at https://labormarketinfo.edd.ca.gov/file/lfmonth/allsubs.xls.

Summary

If funded, the proposed projects would support ultra-low-carbon fuels that reduce GHG emissions, decrease air pollution, prevent wildfire, and help achieve the state's climate change and clean air goals.

Based on EJSM standards, CEC staff has identified Fresno and Oroville, where these projects are located, as high-risk communities. These communities are at a higher risk of adverse health effects from pollution. However, staff found no indication that the CTP-funded projects identified in this LHI Report would negatively affect community health. Staff does not anticipate a significant increase in local pollutants, and the project awardees identify no major construction that would generate criteria emissions or pollutants. In fact, these proposed projects may create a net benefit for the surrounding communities, by reducing harmful criteria air pollutants, toxic air contaminants, and GHGs that contribute to climate change.

GLOSSARY

Term	Definition
Anaerobic digestion (AD)	A sequence of processes by which microorganisms break down biodegradable material in the absence of oxygen. The process is used for industrial or domestic purposes to manage waste or to produce fuels.
Bone dry ton (BDT)	A unit of weight equal to 2,000 pounds of material at zero percent (0%) moisture content.
California Code of Regulations (CCR)	The official compilation and publication of the regulations adopted, amended, or repealed by state agencies under the Administrative Procedure Act (APA). Properly adopted regulations that have been filed with the Secretary of State have the force of law.
California Environmental Quality Act (CEQA)	A statute that requires state and local agencies to identify the significant environmental impacts of their actions and avoid or reduce those impacts, if feasible.
CalEnviroScreen	A screening tool that evaluates and ranks census tracts in California based on potential exposures to pollutants, adverse environmental conditions, socioeconomic factors, and prevalence of certain health conditions.
Carbon dioxide equivalent (CO ₂ e)	A measure used to compare the emissions from various greenhouse gases based upon the associated global warming potential.
Carbon monoxide (CO)	A colorless, odorless, highly poisonous gas formed by the incomplete combustion of certain fuels, including gasoline.
Community-based organization (CBO)	An organization that is intended to serve a particular geographic area and is based mainly in the community which it serves.
Criteria air pollutant	An air pollutant for which acceptable levels of exposure can be determined and for which the U.S. Environmental Protection Agency has set an ambient air quality standard. Examples include ozone (O_3) , carbon monoxide (CO) , nitrogen oxides (NO_x) , sulfur oxides (SO_x) , and particulate matter $(PM_{10} \text{ and } PM_{2.5})$.
Disadvantaged community	A designation by the California Environmental Protection Agency used to identify areas disproportionately affected by environmental pollution or hazards, due to geographic, socioeconomic, public health, and environmental factors.

Term	Definition
Environmental justice (EJ)	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
Environmental Justice Screening Method (EJSM)	An approach that combines environmental and demographic indicators to inform agency outreach and engagement practices regarding environmental justice.
Grant funding opportunity (GFO)	Where the California Energy Commission offers applicants an opportunity to receive grant funding for projects meeting certain requirements.
Localized health impacts (LHI)	Potential health impacts to communities.
Metric ton (MT)	A unit of weight equal to 1,000 kilograms or 2,205 pounds.
Nitrogen oxides (NO _x)	A general term including nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation.
Notice of proposed awards (NOPA)	A document identifying projects that are proposed to receive funding under a California Energy Commission funding opportunity, such as a Grant Funding Opportunity.
Particulate matter (PM)	Any material besides pure water that exists in a solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particles resulting from combustion.
PM _{2.5}	Particulate matter with particles 2.5 microns in diameter or smaller. Also called "fine particulate matter."
PM ₁₀	Particulate matter with particles 10 microns in diameter or smaller. Also called "coarse particulate matter."
Reactive organic gas (ROG)	Closely related to the term "volatile organic compound" (VOC). ROGs are a group of chemical gases that may contribute to the formation of smog.
Sulfur dioxide (SO ₂)	A gaseous air pollutant composed of one sulfur atom and two oxygen atoms.
Sulfur oxides (SO _x)	A group of pungent, colorless gases formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

Term	Definition
Toxic air contaminant	An air pollutant, identified in California Air Resources Board regulations, which may cause negative health effects even at very low concentrations.
Volatile organic compound (VOC)	Closely related to the term "reactive organic gas" (ROG). VOCs are carbon-containing compounds that evaporate into the air (with a few exceptions), and often have an odor. VOCs contribute to the formation of smog, and/or may themselves be toxic. Some examples include gasoline, alcohol, and the solvents used in paints.

Sources: California Air Resources Board, CEC Energy Glossary, University of Michigan School of Public Health, and U.S. Environmental Protection Agency