CALIFORNIA ENERGY COMMISSION

CALIFORNIA NATURAL RESOURCES AGENCY

California Energy Commission

STAFF REPORT

Localized Health Impacts Report

Selected Projects Awarded Funding Through the Clean Transportation Program Under Solicitation GFO-21-605 — Zero-Emission Transportation Manufacturing

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California Energy Commission

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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) funding. Preventing or minimizing health risks from pollution is vital in any community, but it is especially important for communities 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. This LHI Report is required under those guidelines (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."

This LHI Report is made publicly available at least 30 days before projects are approved 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-21-605. This grant initiative seeks to expand in-state manufacturing of zero-emission vehicles and associated infrastructure, batteries, and other components. Under California Code of Regulations Title 13, Section 2343, this report is available for public comment for 30 days before the approval of projects at a publicly noticed business meeting.

CEC staff has proposed 12 projects for Clean Transportation Program grant funding awards under Solicitation GFO-21-605. Some of these projects have multiple locations. Based on project site information provided by the awardees, 6 of the 13 communities 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), electric vehicles (EVs), electric vehicle supply equipment (EVSE), environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), hydrogen refueling station equipment, localized health impacts (LHI), manufacturing

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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. Under California Code of Regulations Title 13, Section 2343, this Localized Health Impacts Report describes the manufacturing projects proposed for funding that may require a conditional or discretionary permit or environmental review. These permits include conditional-use permits, air-quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. Since ministerial-level permits do not assess public health–related pollutants, staff does not assess projects requiring only ministerial-level permits in this report.

The CEC is required to assess the local health impacts of projects proposed for Clean Transportation Program funding. This report focuses on the potential health impacts to communities from project-related emissions or pollution. Environmental justice communities, low-income communities, and minority communities are considered to be at higher risk of adverse health impacts from pollution. Project locations in these communities are considered "high-risk community project locations." High-risk communities are identified using demographic data with environmental data for air quality from the California Air Resources Board.

CEC staff proposes 12 projects for Clean Transportation Program grant funding awards under Solicitation GFO-21-605, titled "Zero-Emission Transportation Manufacturing." This initiative seeks to expand manufacturing of zero-emission vehicles and associated infrastructure, batteries, and other components in California. Staff analyzes localized health impact information submitted by the project awardees. Based on project site information provided by the awardees, 6 (Escondido, Lancaster, Merced, Richmond, Santa Ana, and Vista) of the 13 communities where proposed projects are located are considered high-risk. Community members near the proposed project sites may be at a higher risk of adverse health impacts from pollution. Staff does not anticipate a net increase in the pollution burden for the communities where these projects are located. Meanwhile, staff expects the projects to contribute to overall reductions in pollutants such as greenhouse-gas emissions.

CHAPTER 1:
Projects Proposed for Funding

Background

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Clean Transportation Program (CTP, originally called the "Alternative and Renewable Fuel and Vehicle Technology Program"). Assembly Bill 118, amended by Assembly Bill 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." Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the CTP to January 1, 2024.

On March 30, 2022, the CEC released a competitive grant solicitation titled "Zero-Emission Transportation Manufacturing" (GFO-21-605). GFO-21-605 offered CTP grant funding for projects that increase in-state manufacturing of zero-emission vehicles (ZEVs) and ZEV components, batteries, and charging or refueling equipment. By increasing availability of ZEVs and supporting equipment, GFO-21-605 will support the transition from fossil-fueled vehicles to ZEVs, which will reduce criteria air pollutants and greenhouse gas (GHG) emissions in California.

Please Note: This report has been revised. Added language appears in bold underline (**example**) and deletions appear in strikethrough (~~example~~). To effectively include access to the marked-up language for all users, please refer to the following key codes:

- "(bbu)" means begin bold underline text.
- "(ebu)" means end bold underline text.
- "(bst)" means begin strikethrough text.
- "(est)" means end strikethrough text.

Items marked with an asterisk in parentheses **(*)** were updated after the original version of this LHI Report was published, but it is not practical to show the changes in this revised report. See Addendums and Revisions for these previous changes.[1]

Projects Selected

On August 24, 2022, the CEC posted a notice of proposed awards (NOPA)[2] identifying the 12 projects awarded grant funding under GFO-21-605. This LHI Report assesses the locations of each of those projects. Table 1 lists the proposed project location(s) for each of the

1 Addendums and Revisions are located at: Localized Health Impacts Report: Selected Projects Awarded Funding Through the Clean Transportation Program Under Solicitation GFO-21-605 — Zero-Emission Transportation Manufacturing California Energy Commission. Accessed June 8, 2023. Available at https://www.energy.ca.gov/publications/2022/localized-health-impacts-report-selected-projects-awarded-funding-through-clean-4.

2 Willis, Crystal. 2022. "Notice Of Proposed Awards." California Energy Commission. Accessed September 13, 2022. Available at https://www.energy.ca.gov/sites/default/files/2022-08/GFO-21-605_NOPA_2022-08-24_ada.docx.

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 Table 3.

Each project falls into one of the following categories:

- Category 1: Complete ZEV, including battery-electric and fuel-cell electric vehicles
- Category 2: ZEV infrastructure, including electric vehicle supply equipment (EVSE), hydrogen refueling station equipment, and similar
- Category 3: ZEV and ZEV infrastructure components
- Category 4: Batteries primarily for use in ZEVs, ZEV infrastructure, or both

Table 1 lists the category for each project.

Table 1: Project Details Along With EJ Indicators

Proposed Awardee	Project Category	Project Title	Project Location	EJ Indicator(s)
American Lithium Energy Corporation	4 (Batteries)	Scaling Manufacturing of High-Performance Battery Cells to Accelerate Zero-Emissions Transportation	2261 Rutherford Rd, Carlsbad, CA 92008	(None)
Aptera Motors Corp.	1 (Complete ZEV)	Aptera Solar Mobility Manufacturing Project	2340 Cousteau Ct, Vista, CA 92081	Age, Minority
Aptera Motors Corp.	1 (Complete ZEV)	Aptera Solar Mobility Manufacturing Project	5818 El Camino Real, Carlsbad, CA 92008	(None)
BYD COACH & BUS LLC	1 (Complete ZEV)	BYD Battery Electric School Bus Manufacturing Facility	Northwestern corner of W Ave H-8 and 50th St W, Lancaster, CA 93536	Minority, Poverty, Unemployment
ChargePoint, Inc.	2 (ZEV Infrastructure)	The ZEV Charging Manufacturing Project: Creating and Scaling Production Lines in California	1171 Montague Expy, Milpitas, CA 95035	Minority
ChargePoint, Inc.	2 (ZEV Infrastructure)	The ZEV Charging Manufacturing Project: Creating and Scaling Production Lines in California	1510 Dell Ave, Suite A and B, Campbell, CA 95008	(None)

Proposed Awardee	Project Category	Project Title	Project Location	EJ Indicator(s)
Cuberg Inc. **(*)**	4 (Batteries)	Make Oil History — High-Performance Battery Systems Manufacturing to Support Zero-Emission Transportation in California	2010 Williams St, San Leandro, CA 94577	Minority
(bst)~~FirstElement Fuel, Inc.~~	~~3 (Components)~~	~~Enabling California Hydrogen Station Manufacturing (GFO-21-605 Zero-Emission Transportation Manufacturing)~~	~~7800 National Dr, Livermore, CA 94550~~	~~(None)~~(est)
(bbu)**FirstElement Fuel, Inc.**	**3 (Components)**	**Enabling California Hydrogen Station Manufacturing (GFO-21-605 Zero-Emission Transportation Manufacturing)**	**7810 National Dr, Livermore, CA 94550**	**(None)**(ebu)
FirstElement Fuel, Inc.	3 (Components)	Enabling California Hydrogen Station Manufacturing (GFO-21-605 Zero-Emission Transportation Manufacturing)	660 E Dyer Rd, Santa Ana, CA 92705	Minority, Poverty
GILLIG LLC	1 (Complete ZEV)	Zero-Emission Bus Manufacturing Ramp-Up in the State of California	451 Discovery Dr, Livermore, CA 94551	(None)
Moxion Power Co	4 (Batteries)	California ZEV Manufacturing Project: Scaling In-State Battery Production to Drive Mobile ZEV Charging	1411 Harbour Way S, Richmond, CA 94804	Minority, Poverty
Sparkz, Inc.	4 (Batteries)	Infrastructure Support for Battery Manufacturing Scale Up	3509 E Childs Ave, Merced, CA 95341	Minority, Poverty, Unemployment

Proposed Awardee	Project Category	Project Title	Project Location	EJ Indicator(s)
Symbio North America Corporation	1 (Complete ZEV)	Symbio One — California Hydrogen Fuel Cell Manufacturing and Training Facility	12760 Danielson Ct, Poway, CA 92064	Age
Symbio North America Corporation **(*)**	1 (Complete ZEV)	Symbio One — California Hydrogen Fuel Cell Manufacturing and Training Facility	2057 Aldergrove Ave, Escondido, CA 92029	Minority, Poverty
Wiggins Lift Co., Inc.	1 (Complete ZEV)	WE LIFT (Wiggins Electrified Long-term Investment in Forklift Technology)	2571 Cortez St, Oxnard, CA 93036	Minority
Zimeno Inc. DBA Monarch Tractor	1 (Complete ZEV)	ZEAT — Zero Emission Agricultural Tractors	203 Lawrence Dr, Livermore, CA 94551	(None)

Source: CEC staff

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

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 original posting date for this report 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 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.

The public can email comments to FTD@energy.ca.gov or mail them 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-21-605 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 CalEnviroScreen[3] 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.

American Lithium Energy Corporation

American Lithium Energy Corporation's (ALE's) proposed project, titled "Scaling Manufacturing of High-Performance Battery Cells to Accelerate Zero-Emissions Transportation," will upgrade the company's existing battery factory in Carlsbad. Manufacturing will release the solvent *N*-Methyl-2-pyrrolidone (NMP). ALE plans to recover or decompose 99 percent of NMP but estimates that 166 kg will be released annually. Also, ALE expects 75 kg of electrolyte to evaporate and be released annually. ALE does not expect the project to emit criteria air pollutants, however. By increasing production of batteries for ZEVs, the company expects the project to help replace fossil-fueled vehicles with ZEVs, reducing GHG emissions and criteria air pollutants.

Outreach will include hiring locals for manufacturing and engineering jobs. ALE plans to work with the career-development program at nearby MiraCosta College as well as other organizations such as the San Diego Regional Economic Development Corporation.

Aptera Motors Corp.

Aptera's proposed project, titled "Aptera Solar Mobility Manufacturing Project," will upgrade existing facilities in Carlsbad and Vista. Since upgrades are to existing industrial-use buildings, and there will be no outdoor construction, Aptera does not expect any significant project-generated emissions or adverse community health impacts. The project will increase manufacturing of ZEVs that could replace fossil-fueled vehicles. Thus, Aptera estimates that the project will reduce GHG emissions by between 145,769 and 188,158 metric tons of carbon dioxide equivalent (CO_2e) during the project period, and between 223,797 and 288,877 metric tons of CO_2e three years after the project is completed. Aptera also projects a reduction of 276 metric tons of criteria air pollutants over the project term and 424 metric tons in the three years after completion.

3 This tool ranks U.S. Census tracts based on geographic, socioeconomic, public health and environmental hazard criteria. See "CalEnviroScreen." Office of Environmental Health Hazard Assessment. Accessed September 13, 2022. Available at https://oehha.ca.gov/calenviroscreen.

In addition to social-media outreach, Aptera plans to partner with local high schools and community colleges for training and recruitment, and with public and nonprofit organizations to focus on recruiting workers from disadvantaged communities.

BYD COACH & BUS LLC

BYD Coach & Bus's (BYD's) proposed project, titled "BYD Battery Electric School Bus Manufacturing Facility," will construct nine new manufacturing buildings on currently undeveloped land in Lancaster. BYD does not expect the project to significantly increase local air pollution. Bus painting will occur at the factory, but BYD states that it will be done in painting booths to reduce emissions. BYD believes that the project will have a net positive health impact by producing zero-emission school buses that can replace fossil-fueled ones, reducing GHG and diesel particulate matter emissions. BYD estimates that each bus replacement will decrease CO_2 emissions by over 80 percent.

Outreach will include quarterly emails to local residents and informational events with local governments, community colleges, Building Trades of Los Angeles County, and private organizations.

ChargePoint, Inc.

ChargePoint's proposed project, titled "The ZEV Charging Manufacturing Project: Creating and Scaling Production Lines in California," will upgrade existing factories in Campbell and Milpitas. The project will involve acquiring equipment and materials, but no construction, and ChargePoint expects that it will not have a significant negative health impact on surrounding communities. Also, the company expects that electric vehicle (EV) chargers produced as a result of this project will reduce pollution by allowing more drivers to switch from fossil-fueled vehicles to EVs. ChargePoint estimates a reduction of up to 1.6 million metric tons of GHGs over the project term, and also expects reductions in carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter 2.5 microns in diameter or smaller ($PM_{2.5}$).

Outreach will focus on marketing and include digital advertising and blog posts. ChargePoint also offers training courses on installing EV chargers, and plans to work with local high schools and community colleges on workforce development.

Cuberg Inc.

Cuberg's proposed project, titled "Make Oil History — High-Performance Battery Systems Manufacturing to Support Zero-Emission Transportation in California," will renovate an existing industrial building for battery manufacturing. Cuberg does not expect the project to cause significant negative health impacts to the surrounding community. Meanwhile, it expects that EV batteries produced as a result of this project will reduce pollution by allowing more drivers to switch from fossil-fueled vehicles to EVs.

Outreach will include working with local community colleges to recruit workers and developing mentorship or apprenticeship programs with local schools, trade schools, and community colleges. Cuberg also plans dedicated recruitment for workers from traditionally underrepresented groups, such as women, LGBTQ people, and Black people.

FirstElement Fuel, Inc.

FirstElement's proposed project, titled "Enabling California Hydrogen Station Manufacturing," will upgrade existing industrial buildings to expand manufacturing capacity for hydrogen refueling stations. It will also install a field test site on an industrial lot in Livermore. FirstElement does not expect the project to have a significant negative health impact on the community. The company says that the stations it produces dispense hydrogen with a net-zero carbon intensity. Availability of hydrogen refueling stations can encourage drivers to switch from fossil-fueled to hydrogen-powered vehicles. Since the project will increase manufacturing of these stations, FirstElement estimates that it will reduce GHG emissions by 588,015 metric tons of CO_2e per year, as well as reduce criteria air pollutants.

Outreach will include working with the Coalition for Clean Air and Breathe SoCal to educate the community about the project.

GILLIG LLC

GILLIG's proposed project, titled "Zero-Emission Bus Manufacturing Ramp-Up in the State of California," will upgrade manufacturing capabilities of an existing facility in Livermore. It will involve construction to add around 11,000 square feet of office space at the site. GILLIG does not expect the project to emit criteria air pollutants or toxic air contaminants. The company expects it to reduce emissions by speeding up the replacement of fossil-fueled buses with zero-emission models. For each bus replaced, GILLIG estimates a reduction of 128.1 short tons (116.2 metric tons) of GHGs. The company estimates reductions of NO_x, particulate matter 10 microns in diameter or smaller (PM_{10}), $PM_{2.5}$, volatile organic compounds (VOCs), and sulfur oxides (SO_x) as follows.

Table 2. GILLIG Estimated Emissions Reductions (in pounds, per bus)

NOx	PM_{10}	$PM_{2.5}$	VOC	VOC (Evaporative)	SO_x
443.8	1.0	0.9	16.7	5.3	1.9

Source: GILLIG

Outreach plans are more general, rather than project-specific, but include working with local community-based organizations (CBOs), high schools, community colleges, and the company's union members to promote workforce development.

Moxion Power Co.

Moxion Power Co.'s (Moxion's) proposed project, titled "California ZEV Manufacturing Project: Scaling In-State Battery Production to Drive Mobile ZEV Charging," will expand battery production for the company's battery-powered mobile charging units. The project will construct a new warehouse of around 200,000 square feet, including up to 8,000 square feet of office space. Manufacturing equipment will be electrically powered and the company expects that the project will not release significant criteria air pollutants or toxic air contaminants. Moxion expects product shipping and other project-related traffic to increase GHG emissions by 172 metric tons of CO_2 annually.

However, Moxion expects the EV chargers produced to facilitate switching from fossil-fueled vehicles to EVs. Assuming a 10-year lifespan for chargers, the company estimates that this will

reduce GHG emissions by 8,825,000 metric tons and also reduce criteria air pollutants and toxic air contaminants.

Outreach will include quarterly meetings with trade groups, local educational institutions, government agencies, and other groups for local workforce development.

Sparkz, Inc.

Sparkz's proposed project, titled "Infrastructure Support for Battery Manufacturing Scale Up," will build a new factory on undeveloped land in Merced. The company does not expect the facility to have a significant negative impact on community health. Sparkz plans to minimize VOC and electrolyte emissions and avoid using the solvent NMP in manufacturing. Sparkz did not directly address GHG emissions, but as with other GFO-21-605 projects, CEC staff expects the project to reduce GHG pollution by allowing more people to switch from fossil-fueled vehicles to EVs.

Outreach will include working with local economic-development agencies, community leaders, and community colleges to inform the public of the benefits of the project, and hosting facility walkthroughs after construction.

Symbio North America Corporation

Symbio North America Corporation's (Symbio's) proposed project, titled "Symbio One — California Hydrogen Fuel Cell Manufacturing and Training Facility," will upgrade existing industrial buildings in Escondido and Poway to allow hydrogen fuel-cell vehicle production. Symbio does not expect the project to have significant impacts on local health. Since the project will produce hydrogen fuel-cell trucks that can replace diesel-powered models, Symbio estimates that it will reduce GHG emissions by 31,750 metric tons of CO_2 per year, or 127 metric tons of CO_2 per truck produced. The company also estimates a reduction of 64.4 kg of NO_x, 3.3 kg of reactive organic gases (ROGs), and 2.7 kg of PM_{10} per truck.

Symbio plans to work with local nonprofits, CBOs, high schools, colleges, and universities to promote awareness of hydrogen fuel-cell vehicles and clean transportation.

Wiggins Lift Co., Inc.

Wiggins Lift Co., Inc.'s (Wiggins's) proposed project, titled "WE LIFT (Wiggins Electrified Long-term Investment in Forklift Technology)," will expand the zero-emission forklift production capacity of the company's existing factory in Oxnard. This will include constructing a 17,500- to 20,000-square-foot addition. By increasing the production of zero-emission forklifts that can replace diesel-powered ones, Wiggins estimates that the project will reduce GHG emissions by 1,000 tons of CO_2 annually, as well as reducing criteria-pollutant emissions. Wiggins also plans to install more energy-efficient production equipment and solar panels with battery storage, which the company expects to further reduce GHG emissions.

Outreach will include working with local adult schools, workforce development agencies, California State University Channel Islands, and other organizations for workforce development.

Zimeno Inc. DBA Monarch Tractor

Zimeno Inc. DBA Monarch Tractor's (Monarch's) proposed project, titled "ZEAT — Zero Emission Agricultural Tractors," will establish a new production line at an existing industrial

facility in Livermore. Monarch did not directly assess whether the project would have significant local health impacts. However, by increasing production of zero-emission tractors that can replace fossil-fueled ones, Monarch estimates that the project will reduce emissions by 13,100 metric tons of CO_2e and 105 metric tons of NO_x.

Monarch did not directly address community outreach, although it plans to work with the California Employment Development Department and other organizations to promote job opportunities at the facility.

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).[4] 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 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, $PM_{2.5}$, or PM_{10}. The environmental standard uses CARB air quality monitoring data on nonattainment[5] status for these pollutants.

Using 2020 data,[6] all projects are in communities that meet the environmental standard, since they are within a nonattainment zone for ozone, $PM_{2.5}$, or PM_{10}. This 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. 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.

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4 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.

5 A *nonattainment* area is a geographic area that does not meet state and/or national Ambient Air Quality Standards for a given pollutant. See "Maps of State and Federal Area Designations." California Air Resources Board. September 12, 2022. Available at https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

6 Ibid.

The demographic standard uses the U.S. Census Bureau's American Community Survey five-year estimates[7] on race, ethnicity, age, and poverty, and the California Employment Development Department's monthly data[8] on unemployment. Specifically, this LHI Report uses city-level unemployment data. Unemployment data are not seasonally adjusted.

Six of the 13 communities where these projects are located meet the demographic standard, since they exceed the threshold for two or more EJ indicators (Table 3).

Analysis Results

Staff finds that 6 of the 13 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, 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 (2020)	Asian (2020)	Black or African American (2020)	Hispanic or Latino (Any Race) (2020)	Native Hawaiian and Pacific Islander (2020)	Under 5 Years of Age (2020)	65 Years of Age and Over (2020)	Below Poverty Level (2020)	Unemployment (July 2022)
California	**0.8%**	**14.8%**	**5.7%**	**39.1%**	**0.4%**	**6.1%**	**14.3%**	**12.6%**	**3.9%**
EJ Indicator Threshold	**30%**	**30%**	**30%**	**30%**	**30%**	**7.3%**	**17.2%**	**12.6%**	**3.9%**
Campbell	0.4%	23.6%	2.3%	19.7%	0.2%	6.5%	14.3%	6.9%	1.9%
Carlsbad	0.4%	9.1%	1.1%	15.5%	0.2%	4.9%	16.5%	6.6%	2.7%
Escondido †	1.0%	6.1%	2.3%	51.9%*	0.4%	6.9%	13.1%	13.6%*	2.9%
Lancaster †	0.6%	4.6%	21.1%	43.0%*	0.1%	7.3%	10.5%	20.2%*	7.3%*
Livermore	0.3%	13.2%	1.7%	21.3%	0.7%	6.5%	13.2%	4.3%	2.2%
Merced†	1.2%	11.1%	5.2%	57.6%*	0.1%	7.2%	10.3%	25.8%*	6.0%*
Milpitas	0.5%	68.1%*	3.5%	13.8%	0.1%	6.7%	11.5%	6.7%	2.3%
Oxnard	1.3%	6.7%	2.2%	75.1%*	0.4%	6.7%	10.0%	11.6%	3.9%
Poway	0.4%	12.4%	2.1%	16.2%	0.6%	6.1%	18.4%*	4.8%	2.4%

7 American Community Survey codes DP05 and S1701 were used to find data. See "Explore Census Data." U.S. Census Bureau. Accessed September 12, 2022. Available at https://data.census.gov/cedsci/.

8 Overview page with data from most recent and previous months: "Unemployment Rate and Labor Force." Employment Development Department. Accessed September 13, 2022. Available at https://labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html.

Site Location	American Indian and Alaska Native (2020)	Asian (2020)	Black or African American (2020)	Hispanic or Latino (Any Race) (2020)	Native Hawaiian and Pacific Islander (2020)	Under 5 Years of Age (2020)	65 Years of Age and Over (2020)	Below Poverty Level (2020)	Unemployment (July 2022)
Richmond †	0.7%	15.0%	18.2%	44.1%*	0.5%	5.6%	13.7%	13.9%*	3.6%
San Leandro	1.0%	34.7%*	10.3%	26.6%	1.6%	4.5%	16.4%	9.3%	3.1%
Santa Ana†	0.6%	12.1%	1.0%	76.0%*	0.2%	6.7%	9.8%	13.4%*	2.8%
Vista†	0.7%	4.3%	3.1%	50.2%*	0.9%	7.4%*	10.7%	11.3%	3.3%

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

Summary

If funded, the proposed projects would expand in-state manufacturing and supply of ZEVs and supporting infrastructure, such as EV charging. This expansion will achieve emissions reductions by encouraging residents and businesses to switch from fossil-fueled vehicles to ZEVs.

Based on EJSM standards, CEC staff has identified 6 out of 13 communities where these projects are located as high-risk communities. These communities are at a higher risk of adverse health effects from pollution. Some of the projects involve significant construction to build or expand facilities. 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. Meanwhile, these proposed projects may reduce harmful criteria air pollutants, toxic air contaminants, and greenhouse gases (GHGs) that contribute to climate change.

GLOSSARY

Term	Definition
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_2e)	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} 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.
Electric vehicle (EV)	A vehicle that is powered partly or completely by electricity. This often refers to battery-electric vehicles, which have no engine and store all the energy in batteries. The term can also include other vehicle types, such as plug-in hybrids.
Environmental justice (EJ)	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with

Term	Definition
	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	A unit of weight equal to 1,000 kilograms or 2,205 pounds.
N-Methyl-2-pyrrolidone (NMP)	A solvent with many applications, including electronics manufacturing. The U.S. Environmental Protection Agency finds that it may have harmful health effects.
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 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.
Zero-emission vehicle (ZEV)	A vehicle that produces no emissions from the onboard source of power. Common examples are battery-electric vehicles and hydrogen fuel-cell electric vehicles.

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