

California Energy Commission STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-14-607 – Zero Emission Vehicle Readiness



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ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission 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 ARFVTP through January 1, 2024.

AB 118 also directs the California Air Resources Board (ARB) to develop guidelines to ensure air quality improvements. The *ARB Air Quality Improvement Program (AQIP) Guidelines*, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The *AQIP Guidelines* require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343). As provided by 13 CCR § 2343, this *Localized Health Impacts Report* is required to be available for public comment for 30 days prior to the approval of projects.

This *Localized Health Impacts Report* analyzes the combined impacts in the communities, including exposure to air contaminants or localized air contaminants, or both, and including, but not limited to, communities of minority populations or low-income populations, as declared by the project proposers or as determined by Energy Commission staff. Appendix A, *Localized Health Impact Report Assessment Method*, describes the analysis used for this report.

Keywords: Air pollution, air quality, Air Quality Improvement Program (AQIP), California Air Resources Board (ARB), alternative fuel, Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), criteria emissions, demographics, environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), fuel cell electric vehicle (FCEV), plug-in vehicle (PEV), zero-emission vehicle (ZEV)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343)*, this *Localized Health Impacts Report* describes the alternative fuel infrastructure projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding that may or may not require a conditional or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

The California Energy Commission is required to assess the localized health impacts of the projects proposed for ARFVTP funding. This *Localized Health Impacts Report* focuses on the potential impacts a readiness plan may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases. For high-risk communities, this report assesses the impacts from criteria emissions/air toxics and the air quality attainment status.

Environmental justice communities, low-income communities, and minority communities are considered to be the most impacted by any project that could result in increased criteria and toxic air pollutants within an area because these communities typically have the most significant exposure to the emissions. Assessing projects and the communities surrounding them is important because of the health risks associated with these pollutants. Preventing health issues from air pollution in any community is important, but it is especially important to minimize any negative impacts in communities that are already considered to be at risk due to their continued exposure to these contaminants.

The projects in this *Localized Health Impacts Report* are assessed for their location in nonattainment zones for ozone, particulate matter (PM) 2.5 and PM 10. It is not anticipated that implementation of these readiness plans will result in a net increase in criteria and toxic emissions in those communities considered most vulnerable. Potentially, the readiness plans stand to result in cleaner air through ZEV acceptance and use.

CHAPTER 1: Projects Proposed for Funding

On February 3, 2015, the California Energy Commission released competitive Grant Solicitation PON-14-607, titled “Zero-Emission Vehicle (ZEV) Readiness,” under the Alternative and Renewable Fuel Vehicle Technology Program (ARFVTP). This grant solicitation was an offer to fund projects that support new and existing planning efforts for plug-in electric vehicles (PEVs).

On March 17, 2015, the California Energy Commission posted the Notice of Proposed Awards (NOPA) for PON-14-607, resulting in eight projects proposed for funding. This *Localized Health Impact Report* assesses and reports on the potential localized health impacts of the proposed projects. Table 1 lists the projects and the environmental justice (EJ) indicators as defined in Appendix A.

**Table 1: Proposed Projects With EJ Indicator(s)
Listed in the Order of the NOPA for PON-14-607, “Zero-Emission Vehicle (ZEV) Readiness”**

Applicant	Project Name	Project Address	EJ Indicator(s)
City of Palo Alto	Palo Alto EV Scale Project	250 Hamilton Avenue, Palo Alto, California 94301	Age
City of Palm Springs	City of Palm Springs Electric Vehicle Readiness Plan Implementation	3200 East Tahquitz Canyon Way, Palm Springs, California 92263	Poverty and Age
Solano Transportation Authority	Solano County Plug-In Electric Vehicle Readiness Implementation	1 Harbor Center #30, Suisun City, California 94585	Poverty
City of Oakland	Catalyzing PEV Readiness in the Bay Area’s Transit Hub: Code Enhancement and Community	250 Frank Ogawa Plaza, Suite 5301, Oakland, California 94612	Poverty
City of Mount Shasta	Plug-In Electric Vehicle Readiness Glenn-Colusa Planning and Upstate Implementation Project	305 North Mount Shasta Boulevard, Mount Shasta, California 96067	Age and Unemployment
Southern California Association of Governments	Multiunit Dwelling Plug-in Electric Vehicle Readiness Strategies	818 West 7th Street, 12th Floor, Los Angeles, California 90017	Poverty, Minority, and Unemployment
Tahoe Regional Planning Agency	Tahoe-Truckee Regional Plug-In Electric Vehicle Readiness Plan	128 Market Street, Stateline, Nevada 89449 (Project location/region: Truckee and Tahoe, California)	None
Redwood Coast Energy Authority	North Coast and Upstate Fuel Cell Vehicle Readiness Project	633 3rd Street, Eureka, California 95501	Poverty

Source: California Energy Commission staff analysis

City of Palo Alto

Palo Alto EV Scale Project

The City of Palo Alto will use the *Bay Area EV Readiness Plan* with the goal of accelerating the adoption of electric vehicles and increasing the density of fast-charging stations through electric vehicle awareness and education. The City of Palo Alto will conduct two green car shows to promote electric vehicle (EV) ownership and will provide direct outreach to more than 50 commercial and multifamily property owners and managers to promote EV fast-charging stations.

City of Palm Springs

City of Palm Springs Electric Vehicle Readiness Plan Implementation

This project will support the implementation of the Coachella Valley Association of Governments *Plug-In Electric Vehicle Readiness Plan* and the City of Palm Springs *Non-Motorized Transportation Plan*. This project will promote acceptance and acquisition of EV and zero-emission vehicles. Plans are to install four interactive kiosks with locations and maps to EV charging infrastructure in Palms Springs and the Coachella Valley and by adding directional and information signs to Palm Springs EV charging stations in the city; by acquiring remote digital access service to city charging to assist with plug-in electric vehicle (PEV) education and awareness; and by updating city codes to include two codes to EV charging from the *Green Building Standards Code of California Regulations*.

Solano Transportation Authority

Solano County Plug-In Electric Vehicle Readiness Implementation

This project will a) streamline permitting and inspections for PEV charging infrastructure, b) improve the electric vehicle charging station (EVCS) installation process in residential multiunit homes, public sites, workplaces, and transportation corridors countywide, c) reach out potential charging infrastructure host cities, d) coordinate the installation of directional “trailblazer” signs on local streets and roadways and/or signs at public PEV charging stations, e) conduct PEV awareness activities in Solano County, and f) develop guidelines and resources for the adoption of residential and/or nonresidential voluntary measures in California’s building codes.

City of Oakland

Catalyzing PEV Readiness in the Bay Area's Transit Hub: Code Enhancement and Community Infrastructure

The City of Oakland will partner with the City and County of San Francisco, and the Town of Tiburon to support the adoption of the *Green Building Standards Code of California Regulations* in Oakland, San Francisco, and Tiburon. This project will also assess and recommend permitting and inspection best practices for the City of Oakland and Town of Tiburon, as well as outreach and education to the planning and building communities.

City of Mount Shasta

Plug-In Electric Vehicle Readiness Glenn-Colusa Planning and Upstate Implementation

This project will implement the core elements of the *Upstate Plug-In Electric Vehicle Readiness Plan*, while developing a PEV readiness plan for Glenn and Colusa Counties to broaden the Upstate Region and cover “gaps” along the West Coast Green Highway¹. The Upstate PEV Coordinating Council (PEVCC) will expand to include Glenn and Colusa Counties and will guide development of the readiness plan for these counties based on the work completed in the *Upstate PEV Readiness Plan*. In addition, the PEVCC will guide implementation of strategies developed in the *Upstate PEV Readiness Plan* to expedite quick PEV adoption throughout the entire region. The Siskiyou County Economic Development Council will act as the project manager and is the lead agency in the PEVCC.

Southern California Association of Governments

Multiunit Dwelling (MUD) Plug-In Electric Vehicle Readiness Strategies

This project will implement the *Southern California Association of Governments (SCAG) 2012 PEV Readiness Plan*, specific to MUDs, by analyzing PEV penetration data, transportation patterns, and land uses across the SCAG region, which includes 191 cities. The project will focus on the densest cities in the region, which are Beverly Hills, Culver City, Santa Monica, West Hollywood, and the western portions of Los Angeles.

Tahoe Regional Planning Agency

Tahoe-Truckee Regional Plug-In Electric Vehicle Readiness Plan

This project proposes to develop a Tahoe-Truckee Regional PEV Readiness Plan through coordinated engagement with PEV partners and stakeholders in the region, in nearby regions (for example, Sacramento, Reno, Bay Area), and across California. An assessment will be

¹ The West Coast Green Highway is an initiative to promote the use of cleaner fuels. The West Coast Green Highway is the 1,350 miles of Interstate 5 stretching from the United States border and Canada, through Washington, Oregon, and California, to the United States border with Mexico.

developed to establish the existing conditions and identify the key needs in the Tahoe-Truckee region to prepare for and coordinate PEV infrastructure deployment.

Redwood Coast Energy Authority

North Coast and Upstate Fuel Cell Vehicle Readiness Project

This project will accelerate fuel cell electric vehicle (FCEV) adoption in the North Coast and Upstate region by implementing guidance presented in the *Northwest California Alternative Transportation Fuels Planning Project*. The project organizers will a) identify target areas where hydrogen stations could be located, b) engage community organizations and municipal agencies about hydrogen as a fuel, and c) work with at least four municipal fleet managers and public transit operators about the possibility of using FCEVs in their fleets.

CHAPTER 2: Approach

The Localized Health Impact Report Assessment Method (Appendix A) assesses communities potentially impacted by air pollution and benefitted by the proposed readiness plans. The California Air Resources Board (ARB) *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for Assembly Bill (AB) 32 Assessments* is also used to identify low-income communities highly impacted by air pollution.² Other resources are the *California Infrastructure State Implementation Plans*,³ which contain publicly noticed air quality attainment plans, and the *Green Book Nonattainment Areas for Criteria Pollutants*⁴.

For this *LHI Report*, the Energy Commission interprets “permits” to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. Readiness plan implementation has the potential of requiring permits. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial-level permits in this report.

The communities potentially impacted by ZEV readiness plans are in PM⁵ 10 nonattainment zones. Table 1 shows the EJ indicators for the eight cities: one has three EJ indicators, two have two EJ indicators, and the remaining have one. The high-risk communities, according to the Environmental Justice Screening Method (EJSM) described in Appendix A, are Los Angeles, Mount Shasta, and Palm Springs. Table 2 lists the ethnicity, age, and income data for the city/community addresses in the readiness plans.

2 California Air Resources Board, *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).

3 <http://www.arb.ca.gov/planning/sip/sip.htm>.

4 <http://www.epa.gov/oaqps001/greenbk>.

5 “Particulate matter” is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled, and a chief component of exhaust emissions from heavy duty diesel engines.

CHAPTER 3: Summary

The anticipated benefit from implementing the readiness plan projects for the people who live in the cities and the surrounding communities is highly likely, if not certain, to be positive. The projects will develop and implement regional readiness plans for the deployment of zero-emission vehicles. The Energy Commission expects that air quality will improve over time where the readiness plans are proposed along with the net benefit to California.

Table 2: EJ Indicators Compared With California

Yellow highlighted areas indicate numbers (percentages) that meet the definition of EJ indicators. Demographics are based on the project city, and the counties/regions are listed as references.

	Below Poverty Level (2009-2013)	Black Persons (2010)	American Indian and/or Alaska Native (2010)	Asian and/or Pacific Islander (2010)	Persons of Hispanic or Latino Origin (2010)	Persons Under 5 Years of Age (2010)	Persons Over 65 Years of Age (2010)	Unemployment Rate (February 2014)
California	15.3%	6.2%	1.0%	13.0%	37.6%	6.8%	11.4%	6.7%
		>30%	>30%	>30%	>30%			
Eureka (Counties: Del Norte, Glenn, Humboldt, Lake, Mendocino, Shasta, Siskiyou, Tehama, and Trinity)	23.8%	1.9%	3.7%	4.2%	11.6%	6.1%	11.8%	6.1%
Los Angeles (Counties: Imperial, Los Angeles, Orange, San Bernardino, and Ventura)	22.0%	9.6%	0.7%	11.3%	48.5%	6.6%	10.5%	8.1%
Mount Shasta (Counties: Colusa, Glenn, Tehama, Shasta,	13.0%	1.8%	1.5%	1.6%	8.2%	4.5%	18.2%	11.8%

	Below Poverty Level (2009-2013)	Black Persons (2010)	American Indian and/or Alaska Native (2010)	Asian and/or Pacific Islander (2010)	Persons of Hispanic or Latino Origin (2010)	Persons Under 5 Years of Age (2010)	Persons Over 65 Years of Age (2010)	Unemployment Rate (February 2014)
& Siskiyou)								
Oakland	20.5%	28.0%	0.8%	16.8%	25.4%	6.7%	11.1%	6.2%
Palm Springs (Region: Coachella Valley)	18.2%	4.4%	1.0%	4.4%	25.3%	3.9%	26.5%	5.7%
Palo Alto	5.7%	1.9%	0.2%	27.1%	6.2%	5.4%	17.1%	3.0%
Suisun City (County: Solano)	13.5%	20.3%	0.7%	19.0%	24.0%	7.5%	7.7%	5.7%
Truckee (Region: Greater Tahoe area)	9.6%	0.4%	0.6%	1.5%	18.6%	6.6%	7.8%	5.7%

Sources: Unemployment information from the State of California, Employee Development Department (EDD) Labor Market Information Division: <http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=133> and [Age / ethnicity demographics, U.S. Department of Census: http://quickfacts.census.gov](http://quickfacts.census.gov).

CHAPTER 4:

Acronyms

Air Quality Improvement Program (AQIP)

Air Resources Board (ARB)

Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)

Assembly Bill (AB)

California Code of Regulations (CCR)

California Environmental Quality Act (CEQA)

Compressed natural gas (CNG)

Electric vehicle (EV)

Electric vehicle charging station (EVCS)

Environmental justice (EJ)

Environmental justice screening method (EJSM)

Fuel cell electric vehicle (FCEV)

Localized health impact (LHI)

Multiunit dwelling (MUD)

Notice of Proposed Awards (NOPA)

Particulate matter (PM)

Plug-in electric vehicle (PEV)

Plug-in Electric Vehicle Coordinating Council (PEVCC)

Program Opportunity Notice (PON)

Southern California Association of Governments (SCAG)

Zero-emission vehicle (ZEV)

APPENDIX A:

Localized Health Impact Report Assessment Method

Based on the Energy Commission's interpretation of the *California ARB AQIP Guidelines*, this *LHI Report* assesses the potential impacts to communities as a result of the projects proposed by the ARFVTP. This report is prepared under the *California ARB AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 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 not intended to be a detailed environmental health impact analysis of proposed projects nor is it intended to substitute for the environmental review conducted during the California Environmental Quality Act (CEQA) review. This *LHI Report* includes staff application of the Environmental Justice Screening Method (EJSM) to identify readiness plan projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.⁶

The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006. The EJSM integrates data on (i.) exposure to air pollution, (ii.) cancer risk, (iii.) ozone concentration, (iv.) frequency of high ozone days, (v.) race/ethnicity, (vi.) poverty level, (vii.) home ownership, (viii.) median household value, (ix.) educational attainment, and (x.) sensitive populations (populations under 5 years of age or over 65 years of age).

⁶ California Air Resources Board (ARB). *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010*. (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

To determine high-risk communities, environmental justice (EJ) indicators for locations of ZEV readiness implementation are compared to data from the U.S. Department of Census or other public agency. Staff identifies high-risk communities by using a two-part standard. For a community to be considered high-risk, for this assessment, it must meet both Parts 1 and 2 of this standard.

Part 1:

- Communities located in nonattainment air basins for ozone, PM 10 or PM 2.5

Part 2:

- Communities having one or more of the following EJ indicators: (1) minority, (2) poverty, (3) unemployment and/or (4) high percentage of population under 5 years of age and over 65 years of age. The EJ indicators follow:
 - A minority subset represents more than 30 percent of a given city's population. (MINORITY)
 - A city's poverty level exceeds California's poverty level. (POVERTY)
 - A city's unemployment rate exceeds California's unemployment rate. (UNEMPLOYMENT)
 - The percentage of people living in that city are younger than 5 years of age or older than 65 years of age is 20 percent higher than the average percentage of persons under 5 years of age or over 65 years of age for all of California. (SENSITIVE POPULATIONS – AGE)