STAFF REPORT

# LOCALIZED HEALTH IMPACTS REPORT

## Addendum for Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-13-609 – Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities

CALIFORNIA
ENERGY COMMISSION

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# PREFACE

This *Localized Health Impacts (LHI) Report for Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-13-609* was posted May 9, 2014 (CEC-600-2014-004). The assessment approach used in this addendum is as written in CEC-600-2014-004. This report reflected the Round 1 Notice of Proposed Awards (NOPA) for PON-13-609. On July 18, 2014, the California Energy Commission posted the Round 2 NOPA, resulting in additional projects proposed for funding under PON-13-609. This *Localized Health Impact Report Addendum* assesses and reports on the potential localized health impacts for the additional projects recommended for funding.

The increased use of alternative and renewable fuels supports California's commitment to curb greenhouse gas emissions (GHG), reduce petroleum use, improve air quality, and stimulate the sustainable production and use of alternative fuels within California. Alternative and renewable transportation fuels include electricity, natural gas, biomethane, propane, hydrogen, ethanol, renewable diesel, and biodiesel. State investment is needed to fill the gap and fund the differential cost of these emerging fuels and vehicle technologies.

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.

The statute 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).

# ABSTRACT

This *Localized Health Impacts Report* reviews the project proposals under consideration for funding that were submitted in response to the Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities PON-13-609 by the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) and proposed for award after the evaluation committee's second round of scoring. This *Localized Health Impacts Report* contains project and site descriptions (including geographic locations) and potential impacts as contained in the proposals.

This *Localized Health Impacts Report* analyzes the combined locations of projects, 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, as declared by the project proposers or also as determined by California Energy Commission staff. This report identifies outreach to community groups and other affected stakeholders, also as declared by the project proposers.



**Keywords:** Air pollution, air quality, air quality improvement program (AQIP), Air Resources Board (ARB), alternative fuel, Assembly Bill (AB) 118, assessment, biodiesel, biomethane, California Environmental Quality Act, criteria emissions, demographic, diesel substitute, Energy Commission, environmental justice, Environmental Justice Screening Method (EJSM), environmental justice (EJ), ethanol, gasoline substitute, greenhouse gas emissions (GHG), localized health impact (LHI), renewable diesel

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# EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343),* this *Localized Health Impacts Report* addendum describes the alternative fuel infrastructure projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARVTP) funding that may or may not require a conditioned 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 requiring 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 ARVTP funding under Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities Solicitation PON-13-609. This *Localized Health Impacts Report* focuses on the potential impacts the project may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases within their community. For projects located in high-risk communities, this report assesses the impacts from criteria emissions/air toxics, the air quality attainment status, and mitigation plans, if available. This *Localized Health Impacts Report* includes information about the proposer's outreach efforts, including public notices and community outreach.

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 these 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 assessed in this report include 10 locations that fall under three fuel categories. All 10 proposed diesel substitute projects will be located in nonattainment zones for ozone and 2.5 particulate matter (PM). The projects in this *Localized Health Impacts Report* are assessed for potential health impacts for the communities in which they are located; they vary in terms of socioeconomic factors. Based on this analysis, it is not anticipated that implementing these projects will have negative impacts on surrounding communities because there will not be a net increase in criteria and toxic emissions, specifically those communities that are considered most vulnerable. Potentially, the project stands to provide improved quality of life through cleaner air.

# CHAPTER 1:
# Approach, Definitions, and Projects Proposed for Funding

The California Energy Commission, through the Alternative and Renewable Fuels and Vehicle Technology Program (ARFVTP), released a competitive grant solicitation and application package on January 14, 2014. The application due date was March 25, 2014. Grant solicitation PON-13-609 sought to fund projects that develop new or modify existing California-based biofuel production facilities that can sustainably produce at least 50,000 diesel gallon equivalents per year for liquid fuels or 10,000 diesel gallon equivalents per year for biomethane.

The *Localized Health Impacts (LHI) Report* for PON-13-609 was posted May 9, 2014. This report reflected the Round 1 Notice of Proposed Awards (NOPA) for PON-13-609. On July 18, 2014, the California Energy Commission posted Round 2 NOPA, resulting in additional projects proposed for funding under PON-13-609. This *Localized Health Impact Report Addendum* assesses and reports on the potential localized health impacts for the additional projects recommended for funding.

The Energy Commission is required to analyze and publish this *LHI Report* for public review and comment for a period of 30 days. Based on the Energy Commission's interpretation of the Air Quality Improvement Program (AQIP) Guidelines, this *LHI Report* provides information about the communities surrounding the potential project sites and assesses the potential impacts to public health in those communities as a result of the project. 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 or impact analysis of projects potentially to be funded by the program nor is this assessment intended to be a substitute for the comprehensive environmental review conducted by regulatory agencies during the California Environmental Quality Act (CEQA) process. The application of CEQA would provide a more detailed analysis of the potential for adverse environmental effects of the proposed projects.

This report collects available information about the potential air quality impacts of the proposed projects and provides a collective, narrative analysis of the potential for localized health effects from those projects. The AQIP Guidelines mandate that the Energy Commission track the progress of the projects through the CEQA process and ensure a commitment exists from the proposers to complete all mitigation measures required by the permitting agency before they receive the first funding allocation.

Staff reviewed results from the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.[1] 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 identifies the various levels of risk in regions throughout California, and high-risk communities are considered especially vulnerable to even the smallest impacts. The EJSM integrates data on exposure to air pollution, cancer risk, ozone concentration and frequency of high ozone days, race/ethnicity, poverty level, home ownership, median household value, educational attainment, and sensitive populations (populations under 5 years of age, or over 65 years of age).

The ARB applied the method to the San Francisco Bay Area, San Joaquin Valley, and California's desert region. However, the results consider only income among the list of social vulnerability indicators. For communities not yet assessed in the EJSM, the Energy Commission identifies high-risk areas as those in nonattainment basins for ozone, particle pollution, or particulate matter (PM) 2.5 and PM 10, along with populations that have high poverty and minority rates, as well as a high percentage of sensitive populations.

This *LHI Report* contains detailed assessments for all projects proposed for funding. This is most important for those located in low-income communities that are highly impacted by air pollution.

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1 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.

## Permits

For this assessment, 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. For air permits, local air districts conduct a New Source Review (NSR) to determine the emission impacts. 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.

## Demographic Data

Staff collected information on ethnicity, age, and income for the city/community where the potential project, if funded, would be located. The information identifies those communities with higher minority populations, lower incomes, and highly sensitive groups based on age. For this assessment, staff identifies sensitive populations as individuals younger than 5 years of age and older than 65 years of age. The demographic data for the proposed project site are provided in Table 1.

**Table 1: Demographic Data for Cities (percentage)**

| | Persons Below Poverty Level (2008-2012) | Black persons (2010) | American Indian and Alaska Native (2010) | Persons of Hispanic or Latino Origin (2010) | White persons (2010) | Persons under 5 years of age (2010) | Persons over 65 years of age (2010) | Un-employment rate (June 2014) |
|---|---|---|---|---|---|---|---|---|
| **Stockton** | **23.3** | **12.2** | **1.1** | **40.3** | **22.9** | **8.4** | **10.0** | **12.8** |
| **Paramount** | **21.9** | **11.7** | **.8** | **78.6** | **5.6** | **8.7** | **6.3** | **12.1** |
| **Long Beach** | **20.2** | **13.5** | **.7** | **40.8** | **29.4** | **7.0** | **9.3** | **9.0** |
| **Pixley** | **N/A** | **.03** | **.01** | **80.0** | **45.0** | **N/A** | **.06** | **14.2** |
| **Madera** | **27.4** | **3.4** | **3.1** | **76.7** | **49.9** | **10.7** | **7.6** | **13.5** |
| **Keyes** | **33.1** | **1.3** | **1.1** | **57.7** | **34.9** | **9.4** | **8.0** | **19.9** |
| **Vacaville** | **8.7** | **10.3** | **.9** | **22.9** | **55.0** | **6.0** | **10.5** | **5.0** |
| **San Mateo** | **6.5** | **2.4** | **.8.5** | **26.6** | **46.5** | **6.8** | **14.4** | **3.3** |
| **Napa** | **11.3** | **.6** | **.8** | **37.6** | **57.2** | **6.6** | **13.6** | **4.9** |
| **Tulare** | **20.2** | **3.9** | **1.2** | **57.5** | **34.7** | **9.4** | **9.0** | **9.9** |

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=1006 and Demographics information from the U.S. Department of Commerce, U.S. Census Bureau: http://quickfacts.census.gov/qfd/states/06/0603526.html.

## Emissions

Staff collected information about predicted emissions from the project proposals. The emissions considered for this assessment include those from developing pilot-scale and commercial-scale advanced biofuel production facilities.

## Community Status of Proposed Projects

The following community status descriptions for the proposed projects are based on the ARB *Proposed Screening Method,* which integrates data to identify low-income communities that are highly impacted by air pollution.[2] The *California Infrastructure State Implementation Plans* (http://www.arb.ca.gov/planning/sip/sip.htm) are used as a source for public notices for attainment plans. The *Green Book Nonattainment Areas for Criteria Pollutants* (http://www.epa.gov/oaqps001/greenbk) is also used as an information source for this assessment.

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

# CHAPTER 2:
# Projects Proposed for Funding

This chapter summarizes the projects proposed for Energy Commission funding. The projects in this *LHI Report* are:

## Pilot-Scale and Commercial-Scale Advanced Biofuels Production Facilities

### Fuel Category: Diesel Substitutes

- American Biodiesel, Inc. dba Community Fuels – Port of Stockton, Rough & Ready Island, 809-C Snedeker Avenue, Stockton, CA 95203
- Alt Air Fuels, LLC – 14700 Downey Avenue, Paramount, CA 90723
- UrbanX Renewables Group, Inc. – 1571 W. 15th Street, Long Beach, CA 90813

### Fuel Category: Gasoline Substitutes

- Calgren Renewable Fuels – 11704 Road 120, Pixley, CA 93256
- Pacific Ethanol Development, LLC – 3028 Navy Drive, Stockton, CA 95206
  31470 Avenue 12, Madera, CA 93638
- Aemetis, Inc. – 4209 Jessup Road, Keyes, CA 95328

### Fuel Category: Biomethane

- Recology – 6426 Hay Road, Vacaville, CA 95687
- City of San Mateo – 2050 Detroit Dr, San Mateo, CA 94404
- City of Napa – 820 Levitin Way, Napa, CA 94588
- Colony Energy Partners Tulare LLC – West Paige Avenue, between Enterprise Street and South Pratt Street Tulare, CA 93274

## Proposed Diesel Substitute Projects

All three proposed diesel substitute projects will be located in nonattainment zones for ozone and particulate matter (PM) 2.5[3]. The proposed projects are in the process of completing or have completed the California Environmental Quality Act (CEQA) process, and are acquiring or have acquired the necessary air district permits.

# American Biodiesel, Inc. dba Community Fuels

## Project Name: Increased Efficiency for Processing Low-Carbon-Intensity Biodiesel Feedstocks at an Existing Biorefinery

Community Fuels proposes to expand its biodiesel production capabilities to meet the anticipated demand for low carbon fuels expected as a result of the California Low Carbon Fuel Standard at an existing 10 million gallon per year biodiesel production facility located at the Port of Stockton. The address for the project is Port of Stockton, Rough & Ready Island, 809-C Snedeker Avenue, Stockton, CA 95203. Rough & Ready Island, also known as the West Complex, is a 1,450-acre industrial complex. The site is surrounded by former military buildings, which remain vacant or are used for light-industrial purposes and as warehouse space. It is proposed to design and install a process modification to Community Fuels' existing biofuel facility at the Port of Stockton that will allow Community Fuels to convert a broader range of feedstocks into biodiesel. The system will include new tanks, piping, and ancillary components. The project will include upgrades to the existing fuel purification systems of the facility. The project proposed is a modification to existing production processes and does not represent any increase to the existing production capacity. Therefore, no new incremental emissions are expected from the project. There are no homes, day care facilities, elder care facilities, medical facilities, or schools within 3 miles of the existing facility and proposed project.

### *Outreach Efforts*

The Port of Stockton environmental manager and the Fire Marshall work closely with Community Fuels. They are at the planning stage of all projects, and Community Fuels solicits input throughout the project. Community Fuels anticipates participating in three or more conferences each year during the project to raise awareness of the project and benefits. These conferences may include major petroleum industry conferences, events held by the Greater Stockton Chamber of Commerce and Green Team San Joaquin, and various port events. Community Fuels also will issue a press release about the expansion project and anticipates that it will receive local and industry media coverage. In particular, Community Fuels anticipates that the *Port O Call*, the award-winning magazine of the Greater Stockton Chamber of Commerce, will feature the expansion project and keep readers in the region informed about the project and benefits.

Community Fuels also will prepare and distribute electronic newsletters to announce the

[3] "Particulate matter (PM)" is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled. "PM 2.5" refers to fine particles with a diameter of 2.5 micrometers or less.

project and provide key status updates. This newsletter will be distributed to the company's confidential database, which includes more than 600 contacts in the petroleum industry and more than 400 contacts among policy makers, environmental groups, and investors. Community Fuels' website, which receives thousands of visitors, also will be updated to announce the expansion and key environmental and economic benefits associated with the project.

## Alt Air Fuels, LLC

Project Name: AltAir Fuels, LLC Commercial-Scale Biofuels Production Facility

AltAir Fuels, LLC proposes to expand its existing facility (Phase II), located at the Paramount Petroleum Refinery, 14700 Downey Avenue, Paramount, CA 90723, to produce 40 million gallons per year of renewable biodiesel and allow for processing of an additional feedstock. The site is an existing sour and heavy crude oil refinery facility that has been integrated into the surrounding community for the past 50 years. Wirtz Elementary School, Paramount High School, a convalescent hospital, dental clinic, and homes are in the immediate vicinity (within ½ mile). No day care facilities are known in the surrounding area.

Air emissions from operation of the proposed project are minimal as the proposed equipment includes emission control technology and the project proposes use of mostly existing equipment and infrastructure at the Paramount Petroleum Refinery. As compared to the existing Paramount Refinery and the authorized and historical emissions of the refinery, the air emissions of the proposed project are much lower and well within overall site allowed emissions with minor permit changes. The majority of raw materials will be transported by rail. Additional truck transport for the project will be a maximum of 28 trucks per day, assuming all fuel and feedstock shipment is by truck. Total truck traffic will remain significantly less than historical truck volumes at the facility.

*Outreach Efforts*

AltAir Fuels, LLC will conduct outreach through the local media and flyers distributed to nearby residents and businesses. AltAir will follow the same outreach guidelines as required by Los Angeles County for all public works efforts that could have an impact on nearby businesses and homes. Information provided will contain a description of the project and explain local economic impacts. The outreach efforts will occur as construction is initiated, at startup and once per quarter for the duration of the project. AltAir underwent a community outreach effort before undertaking Phase I of the project, including holding a town hall meeting. There were no attendees from the community, and there have been no issues or concerns brought forth by the public at any time.

## UrbanX Renewables Group, Inc.

*Project Name*: Modifying and Expanding an Existing Biodiesel Facility to a Feedstock Flexible $NO_x$-Neutral Renewable Diesel Biorefinery

UrbanX proposes to modify an existing biodiesel production plant to a feedstock flexible renewable diesel biorefinery, located at 1571 W. 15th Street, Long Beach, CA. The site includes a 21,000-square-foot industrial gated facility, situated among other industrial buildings and manufacturing facilities. The site is located in Long Beach's designated westside heavy industrial zoning under classification, IG (industrial general). No schools, homes, elder care or day care facilities exist within 3,000 feet of the facility.

No major negative health impacts have been identified for the proposed project to date. A modest increase in traffic would occur daily at the proposed UrbanX biorefinery facility in the form of additional fuel vehicles and feedstock haulers bringing supplies to the project site. The expanded facility will have expanded hours, and UrbanX will be hiring two logistics coordinators to evenly spread the loading and unloading appointment times to maximize traffic efficiency.

#### *Outreach Efforts*

UrbanX plans to engage diverse cross sections of the community, through community outreach programs, to promote the goals and initiatives of the project. Community involvement is facilitated through outreach efforts such as educational tours of the facility, affiliations with various academic institutions, sponsorship of other programs in California with similar targets, seminars in association with a forum for renewable transportation fuel in Southern California, and initiation of an employee-training curriculum.

### Proposed Gasoline Substitute Projects

All three proposed diesel substitute projects will be located in nonattainment zones for ozone and PM 2.5. The proposed projects are completing or have completed the CEQA process, and are acquiring or have acquired the necessary air district permits.

## Calgren Renewable Fuels

### Project Name: CALGREN: California In-State Sorghum Program

Calgren Renewable Fuels proposes to acquire and process roughly 91,700 tons of low-carbon grain sorghum over 36 months to support production of more than 9 million gallons of sorghum ethanol at its Calgren Pixley facility located at 11704 Road 120, Pixley, CA 93256. The facility is located on a 15.31-acre parcel on the west side of Highway 99 and the Union Pacific Railroad north of Pixley in Tulare County, the site of the World Agriculture Exposition—the country's largest gathering of farm operators, vendors, and businesses. Existing infrastructure includes a fully functioning 40-million-gallon-per-year ethanol facility.

Air emissions from operation of the proposed project are minimal as the project proposes to use existing equipment and infrastructure to conduct the same operations with a different feedstock. Calgren's project will be implemented at its Pixley facility in one of California's most significantly, economically disadvantaged communities that registers more than 19 percent

unemployment. Calgren's project includes significant benefits to the state's efforts to preserve natural resources, including:

- Land Use: Sorghum grows in marginal and less productive soils, reducing conversion pressure for California's agricultural lands.
- Lower Carbon Intensity (CI): Sorghum ethanol produced at Pacific's facilities will possess an average carbon intensity of at least 65.04 grams carbon dioxide equivalent per megajoule (CO2e/MJ), or 19.4 percent below the California Air Resources Board (ARB) Low Carbon Fuel Standard (LCFS) reference baseline for corn ethanol (80.7 gCO2e/MJ) and a significant improvement in current CI production for corn-based ethanol.
- Food Supply: Sorghum eliminates the adverse distortion on food supply that is caused by corn feedstocks.
- Reduced Irrigation Water: Sorghum uses substantially less water for irrigation than corn; ample research suggests savings of 25 to 35 percent. A significant task in this proposal will establish additional water efficiency opportunities with California State University Fresno's Center for Irrigation Technology.
- Drought Tolerance: Sorghum is drought-tolerant, an exceptional crop for California's San Joaquin Valley. Corn is significantly less drought-tolerant.
- Multiple Rotations: Sorghum grows to maturity in less than 4 months, permitting multiple crops per year.
- Improved Air Quality: Reduces emissions of carbon monoxide, particulate matter, toxic chemicals, and greenhouse gas, resulting in better overall air quality than when cars burn conventional gasoline.
- Reduction of Fertilizer Inputs: Sorghum reduces need for added fertilizers by about 80 percent.
- Feed: A valuable coproduct of ethanol is wet distillers grain for cattle, which reduces environmental and land impact of commercial-scale cattle operations. Sorghum produces wet distillers grain that has additional protein benefits over corn, reducing the need for additional protein inputs in cattle operations.

### *Outreach Efforts*

Calgren will undertake a variety of outreach efforts to educate the surrounding community of the environmental benefits and/or impacts of the project. Calgren will work closely with partners at the University of California Kearney Agricultural Research Center and UC Fresno Center for Irrigation Technology. Calgren will also expand outreach to the public through at least three press or media releases, an increased Web and social media presence, and facility tours for local high school and junior college students. Calgren will target prominent state media (*The Sacramento Bee, Los Angeles Times*, NPR, *San Francisco Chronicle,* and *San Jose Mercury News*) to profile the expanding role of sorghum in California.

In addition, in executing the project, Calgren will execute an ambitious outreach and education campaign to solicit farmers to grow California sorghum. This campaign includes field days and an exhibit at the World Agricultural Expo, and distribution of marketing and outreach

materials.

## Pacific Ethanol Development, LLC

Project Name: Pacific Ethanol: California In-State Sorghum Program

Pacific Ethanol proposes to acquire and process about 91,700 tons of low-carbon grain sorghum over 36 months to support production of more than 9 million gallons of sorghum ethanol at its Pacific Ethanol Stockton facility, located at 3028 Navy Drive, Stockton, CA 95206, and its Pacific Ethanol Madera facility, located at 31470 Avenue 12, Madera, CA 93638. Pacific Ethanol will have minimal effects on localized health impact, will add little criteria pollutants and toxic air contaminants to the localized air shed, and will have minor effects on ambient air quality levels to an extent that local community health is adversely affected. Air emissions from operation of the proposed project are minimal as the project proposes to use existing equipment and infrastructure to conduct the same operations with a different feedstock.

*Outreach Efforts*

Community outreach and engagement are critical elements of Pacific Ethanol's approach. Successfully developing a robust, California-grown sorghum supply will require the input of local, state, and federal agencies; seed vendors; sorghum suppliers, farmers and farmer cooperatives; lenders; and the university research community.

Furthermore, in executing the project, Pacific Ethanol will execute an ambitious outreach and education campaign to solicit farmers to grow California sorghum. This campaign will include field days, an exhibit at the World Agricultural Expo, and distribution of marketing and outreach materials.

## Aemetis, Inc.

Project Name: The Aemetis Low-Carbon Sorghum Ethanol Project

Aemetis, Inc. proposes to acquire and process about 91,700 tons of low-carbon grain sorghum over 36 months to support production of more than 9 million gallons of sorghum ethanol at its Aemetis Advanced Fuels Keyes, Inc. commercial ethanol production facility, located at 4209 Jessup Road, Keyes, CA 95328. The project will encompass roughly 12 acres of industrial-zoned property. The ethanol facility is self-contained, with perimeter fencing, and is surrounded by other, non-Aemetis-owned, commercial/industrial businesses. A vacant truck warehouse is adjacent on the west of the Keyes ethanol facility, and a commercial grain elevator/feed company is located to the north of the plant. Next to the grain elevator there is a Union Pacific Railroad (UPRR) rail line and unloading facility. On the east of the ethanol facility, there is a commercial birdseed factory. The town of Keyes is located about a half-mile to the north of the ethanol facility, on the other side of the UPRR and California State Route 99. Pacific Ethanol will have minimal effects on localized health impact, will add little criteria pollutants and toxic air contaminants to the localized air shed, and will have minor effects on ambient air quality levels

to an extent that local community health is adversely affected. Air emissions from operation of the proposed project are minimal as the project proposes to use existing equipment and infrastructure to conduct the same operations with a different feedstock.

*Outreach Efforts*

The company has engaged numerous key parties, and, in addition, Aemetis will execute an ambitious outreach and education campaign to solicit farmers to grow California sorghum. This campaign will include field days, an exhibit at the World Agricultural Expo, and distribution of marketing and outreach materials. The program will seek participation of 100 growers in the first year. To explain the proposed project to the public, Aemetis will issue a press/media release. Throughout the project, Aemetis will update a new page on its website devoted to the project and will offer an annual facility tour for local high school and junior college students. Finally, Aemetis will target prominent state media (*The Sacramento Bee, Los Angeles Times,* and *San Francisco Chronicle*) to profile the role of low-carbon ethanol in California.

### Proposed Biomethane Substitute Projects

All four proposed diesel substitute projects will be located in nonattainment zones for ozone and PM 2.5. The proposed projects are completing or have completed the CEQA process, and are acquiring or have acquired the necessary air district permits.

## Recology Inc.

### Project Name: Recology Hay Road Anaerobic Digester Facility

Recology Inc. proposes to site, build, and operate a 65,500-ton-per-year anaerobic digester at the Recology Hay Road site located at 6426 Hay Road, Vacaville, CA 95687. The facility will be located within the overall Recology property between the north landfill and the south landfill. The site is undeveloped and straddles an old borrow pit area. Extensive earth work, to be done by the civil/site contractor, will be needed to raise the facility site above the 100-year flood plain, level grades, and provide proper soil foundations. The site is zoned agricultural and has an existing solid waste facility and compost facility permitted and operating. Criteria emissions associated with anaerobic digestion processes are considered minimal, and with Best Available Control Technology (BACT), the most stringent emission limits for the criteria emissions can be achieved. Furthermore, this project will act as an example for other facilities on how such a project can operate and will create value for nonusable waste streams. This project also has the potential to support economic growth in an economically distressed area.

*Outreach Efforts*

Recology maintains an active and ambitious outreach and education program, with a strong focus on local governments, local businesses, and residents. Recology's outreach and education program supports waste reduction through efforts to increase public awareness about resource recovery and educating the public as to the benefits of effective waste resource management. Recology is also committed to community involvement through a variety of art and volunteer programs. Recology will incorporate the project into its ongoing outreach to educate the

surrounding community and other stakeholders and interested parties about the benefits of anaerobic digestion and renewable natural gas (RNG) production for resource recovery and waste management. Outreach will typically take the form of in-person meetings or group presentations. Recology already conducts outreach meetings regularly and will continue to do so throughout the proposed project. Meeting frequency would range from quarterly to biennially, depending on the outreach target.

## City of San Mateo

Project Name: Wastewater Digester Gas to Biomethane for Vehicle Fuel

The City of San Mateo proposes to produce 160,000 diesel gallon equivalents of biomethane per year from the unused digester gas that is generated from the city's wastewater treatment plant at 2050 Detroit Dr., San Mateo, CA 94404. The new digester gas treatment and vehicle fueling equipment will also be located on the site. There is a school about 550 feet away, a home about 650 feet away, and a daycare about 1,150 feet from the site. Medical and elder care facilities are located more than ¾- mile away from the site.

This project has the potential to lower the health impacts through reduced vehicle emissions and lower GHG production. The project will also reduce the emissions at the San Mateo Wastewater Treatment Plant by reducing the volume of digester gas that is flared.

*Outreach Efforts*

The city has completed outreach efforts to the community regarding increased traffic to the corporate yard and vehicle fueling in the area. The city also commissioned a transportation impact analysis by Hexagon Transportation Consultants. The efforts have been for the city's corporation yard project, which includes vehicle-fueling facilities and the proposed project. While the corporation yard is across the street from the wastewater treatment plant, it is close enough such that the outreach efforts for the corporation yard are applicable to the project site. The results of the outreach indicated no concerns for locating vehicle-fueling facilities in the corporation yard. The transportation impact analysis concluded that the local intersections would continue to operate at an acceptable level of service with the relocated corporation yard and vehicle-fueling station. The outreach consisted of four public meetings.

## City of Napa

Project Name: Napa Renewable Resources Project Anaerobic Digestion to RNG

The City of Napa proposes to produce 328,000 diesel gallon equivalents of renewable compressed natural gas for transportation from biomethane generated by dry fermentation—anaerobic digestion of the prelandfilled organic portion of food processing and green waste from the Napa area at an existing site located at 820 Levitin Way, Napa, CA 94588. The existing site comprises roughly 18.6 acres, of which about 12 acres are used for organic material management operations, such as composting and chip and grind; 2.2 acres for soil stockpiling; 1.2 acres for concrete recycling; 1.2 acres for material recovery facility (MRF); and about 2.0

acres for support operations. The site is surrounded by industrially zoned property, adjacent to the Napa County Airport Industrial Area, which consists mainly of industrial services and storage, as well as some warehouse/distribution use. The nearest home is about 2,340 feet to the east of the site, across State Highway 29 on Café Court. No other sensitive uses, such as day care facilities, elder care facilities, medical facilities, or schools are located nearby.

The project is not expected to have any negative health impacts on the local population, given local meteorological conditions, the considerable distance to the nearest residents, and the transient nature of the employees of businesses in the surrounding area. As detailed in this document, the reduced emissions of greenhouse gasses and criteria pollutants of the project will provide a net benefit to air quality and diminish any potential localized health impact to area residents.

*Outreach Efforts*

The project team and community stakeholders have been analyzing the alternative technology concepts since 2010 for the development of the Napa Renewable Resource Project. There have been numerous noticed public meetings at the Napa City Council and the Napa County AB 939 Local Task Force, consisting of staff from all of the cities in Napa County and other key appointments representing environmentalist, industry, and county government. Over the last two years, there have been two California Energy Commission grant applications reviewed by the Napa City Council and by many key stakeholders in the community, including Napa Sustainable. The community stakeholders continue to support this community-level project. The next public meeting will be in conjunction with the concurrence of the Solid Waste Facility Permit Revision by the California Department of Resources Recycling and Recovery (CalRecycle) this summer.

## Colony Energy Partners Tulare LLC

### Project Name: Demonstration of the Colony Energy Organic Power System (CEOPS) at the Endeavor Facility

Colony Energy Partners Tulare LLC proposes to develop a commercial-scale anaerobic digester to process locally collected, vacuum-scraped dairy manure, food, and agricultural processing residuals; restaurant and cafeteria food scraps; restaurant grease trap residuals; and organic municipal solid waste. The proposed project site is an industrial-zoned, 18-acre parcel that is located next to the City of Tulare's Industrial Wastewater Treatment Plant. The project site has not been assigned a street address but is located on West Paige Avenue, between Enterprise Street and South Pratt Street in Tulare. The closest homes to the facility are located roughly 1 mile northeast and 1.5 miles southeast of the facility. The closest schools, Valley High School and Mulcahy Middle School, are located roughly 2 miles northeast and 2.5 miles northeast, respectively. No eldercare or daycare facilities could be identified within a 2-mile radius of the proposed project.

Colony's proposed project to build a high-solids anaerobic codigester at the Colony Endeavor Facility provides significant benefits for public health in Tulare, the San Joaquin Valley, and

throughout California. First, this project makes beneficial use of the waste streams of the multifarious industries that are unique to the Central Valley and will prevent their disposal into landfills. The organic portion of this waste will be collected and processed into biomethane, a valuable substitute for conventional natural gas, and used for transportation in place of conventional natural gas or diesel. Colony has negotiated an agreement with its marketing partner, BP Energy North America, to ensure the fuel produced by the Colony Endeavor Facility is used for transportation, helping to reduce California's dependence on highly emitting and carbon-intensive conventional fuels. Colony is also working with its project partners to ensure the fuel produced by the facility meets the highest quality and purity standards, to meet "pipeline-grade quality" standards.

*Outreach Efforts*

Colony Energy Partners has developed a website, which includes information about the proposed facility and the associated significant air quality benefits. Colony has engaged professors at California State University, Fresno's (CSUF) Lyles College of Engineering to serve as technical advisors on the project and is working with its project partner, Lyles Construction Group (LCG), to develop an internship program for students in CSUF's engineering and construction management programs. Upon commissioning, the Colony Endeavor Facility will serve as a "working laboratory" for San Joaquin Valley students and academics, who will be invited to tour the facility. As the facility comes on-line and is scaled for full capacity, Colony will continue to advertise to organic waste producers throughout the region and ensure the greatest quantity of waste is diverted from valley landfills.

# CHAPTER 3:
# Location Analysis and Community Impacts

Based on the staff's assessment of the proposed project, it is expected that the surrounding community has a population that is presumed to be most susceptible to health risks because of their exposure to criteria and toxic air pollutants on a more continual basis as compared with other geographic regions. For this *LHI Report*, environmental justice (EJ) indicators are evaluated as follows.

- A ***minority EJ*** is indicated if a minority subset represents more than 30 percent of a given city's population.

- A ***poverty level EJ*** is indicated if a city's poverty level exceeds California's poverty level (for the entire state – 15.3 percent).

- An ***unemployment EJ*** is indicated if a given city's unemployment rate exceeds California's unemployment rate (for the entire state – 7.4 percent as of June 2014).

- An EJ indicator is also noted for cities where the ***percentage of persons younger than 5 years of age or older than 65 years of age*** is 20 percent higher than the average of the percentage of persons under 5 years of age or over 65 years of age for the entire state. (For the entire state, the percentage of persons under the age of 5 years is 6.8 percent, and the percentage of persons over the age of 65 years is 11.4 percent.)

The proposed project sites have minority, poverty, unemployment, and age EJ indicators. There are 10 projects, in 10 cities, with 11 locations. There are 6 proposed projects with poverty EJ indicators, 8 with ethnicity EJ indicators, 7 with unemployment EJ indicators, and 6 with age EJ indicators. The proposed projects are expected to have a net benefit by reducing emissions and leading to improved air quality. While overall air quality depends on a number of factors, the Energy Commission expects that air quality will improve over time where the sites are proposed. Table 2 of this *LHI Report* covers the cities with EJ indicators.

Staff identifies high-risk communities using the following factors: (1) those located in nonattainment air basins for ozone, PM 10 and PM 2.5; (2) those with high-poverty, minority population, and/or unemployment rates; and (3) those with a high percentage of sensitive populations (under 5 years of age and over 65 years of age). Those designated as high-risk communities would be located in nonattainment air basins and have one or more of the other two factors. The proposed project sites would be in a nonattainment zone for PM 2.5. These projects, according to the EJSM, would be located in high-risk communities.

**Table 2: Cities With EJ Indicators (percentage)**
**(Compared to the State of California)**

Yellow highlighted areas indicate numbers that meet the definitions for EJ Indicators.

| | Persons Below Poverty Level (2008-2012) | Black persons (2010) | American Indian and Alaska Native (2010) | Persons of Hispanic or Latino Origin (2010) | White persons (2010) | Persons under 5 years of age (2010) | Persons over 65 years of age (2010) | Un-employment rate (June 2014) |
|---|---|---|---|---|---|---|---|---|
| California | 15.3 | 6.2 | 1.0 | 37.6 | 40.1 | 6.8 | 11.4 | 7.4 |
| Stockton | 23.3 | 12.2 | 1.1 | 40.3 | 22.9 | 8.4 | 10.0 | 12.8 |
| Paramount | 21.9 | 11.7 | .8 | 78.6 | 5.6 | 8.7 | 6.3 | 12.1 |
| Long Beach | 20.2 | 13.5 | .7 | 40.8 | 29.4 | 7.0 | 9.3 | 9.0 |
| Pixley | N/A | .03 | .01 | 80.0 | 45.0 | N/A | .06 | 14.2 |
| Madera | 27.4 | 3.4 | 3.1 | 76.7 | 49.9 | 10.7 | 7.6 | 13.5 |
| Keyes | 33.1 | 1.3 | 1.1 | 57.7 | 34.9 | 9.4 | 8.0 | 19.9 |
| Vacaville | 8.7 | 10.3 | .9 | 22.9 | 55.0 | 6.0 | 10.5 | 5.0 |
| San Mateo | 6.5 | 2.4 | .8.5 | 26.6 | 46.5 | 6.8 | 14.4 | 3.3 |
| Napa | 11.3 | .6 | .8 | 37.6 | 57.2 | 6.6 | 13.6 | 4.9 |
| Tulare | 20.2 | 3.9 | 1.2 | 57.5 | 34.7 | 9.4 | 9.0 | 9.9 |

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=1006 and Demographics information from the U.S. Department of Commerce, U.S. Census Bureau: http://quickfacts.census.gov/qfd/states/06/0603526.html.

# CHAPTER 4:
# Summary

If funded, the proposed projects would result in 11 sites for commercial-scale advanced biofuel production. Table 1 contains demographic and information on persons below the poverty level, black persons, American Indian and Alaska Native, persons of Hispanic or Latino origin, white persons and persons under 5 years of age and over 65 years of age. The unemployment rate for the community is also given in Table 1. Table 2 indicates the cities and EJ indicators in which the sites are proposed to be located.

Based on the review of the proposed projects in this localized health impacts report, the sites will increase the widespread use of alternative fuel vehicles. As more alternative fuel vehicles enter the market and begin to displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly. The facility stands to increase traffic nominally for inbound deliveries of feedstock and raw materials and outbound deliveries of biodiesel and crude glycerin by truck and rail. Yet, a net benefit is realized from less petroleum use and more alternative fuel use as a result of this project. The anticipated impacts to the city where this project would be located are positive in terms of cleaner air and anticipated GHG reductions.

# CHAPTER 5:
# Acronyms

| | |
|---|---|
| AQIP | Air Quality Improvement Program |
| ARB | Air Resources Board |
| ARFVTP | Alternative and Renewable Fuel and Vehicle Technology Program |
| CCR | California Code of Regulations |
| Energy Commission | California Energy Commission |
| CEQA | California Environmental Quality Act |
| EJ | Environmental justice |
| EJSM | Environmental justice screening method |
| GHG | Greenhouse gas |
| LHI | Localized health impact |
| LCFS | Low Carbon Fuel Standard |
| NOx | Oxides of nitrogen |
| PM | Particulate matter |
| PON | Program Opportunity Notice |