California Energy Commission

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Biofuel Production Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation PON-09-604

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CALIFORNIA ENERGY COMMISSION

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ADDENDUM

The *Localized Health Impacts Report for Selected Biofuel Production Plants awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program under Solicitation PON-09-604* was posted December 24, 2010, and the 30-day public comment period ended January 24, 2011. On February 4, 2011, the California Energy Commission posted a Revised Notice of Proposed Awards resulting in an additional project proposed for funding under PON-09-604.

A second Revised Notice of Proposed Awards was posted on April 13, 2011, for an additional project proposed for funding under this solicitation. This second addendum to the localized health impacts report assesses and reports on the potential localized health impacts of this additional fuel production project recommended for funding in the 2010-2011 funding cycle.

The project assessed in this addendum is:

- AE Advanced Fuels Keyes, Inc.'s, "Integrated Cellulose/Starch Ethanol Pre-Development Acceleration Project."

This project does not require a full assessment and, hence, will not be subject to the 30-day public review period that applies to projects that have potential impacts on low-income communities highly affected by pollution. The following table summarizes the project and its surrounding community.

Table 1: Community Status and Project Overview

Project	At Risk Community	CEQA Completed	Air District Permit Status	Attainment Status for Ozone, PM (2.5), PM(10)
Ethanol				
AE Advance Fuels Keyes, Inc.			In Progress	Non-Attainment (All)

Source: Energy Commission staff analysis

The following is a project overview of the project including a project description, information on the existing site, and discussion of the potential health impacts related to air pollutants explicitly identified in the project proposal. In addition, demographic data for the known or planned project location is provided in Table 2.

Staff reviewed results from the Environmental Justice Screening Method (EJSM) to identify projects that are in areas with social vulnerability indicators (for example, race/ethnicity, income, proximity to sensitive land use, and exposure to air pollution) and the greatest exposure to air pollution and associated health risks. For communities not yet assessed in the EJSM, the Energy Commission identified high-risk areas as those in non-attainment air basins for ozone, particulate matter (PM) (2.5), and PM (10), that have high poverty and high minority rates, as well as a high percentage of sensitive populations.

Project Name

AE Advanced Fuels Keyes, Inc.'s, "Integrated Cellulose/ Starch Ethanol Pre-Development Acceleration Project."

Project Description

AE Advanced Fuels Keyes (AEAFK) will deploy its patent-pending cellulosic ethanol technology in an integrated cellulose/starch (corn) predevelopment biorefinery to continue enzyme optimization and agri-waste feedstock trials, with the goal of commercial implementation at an existing 55 million gallons per year California ethanol production facility. AEAFK expects that the technology, when fully integrated into the existing commercial corn ethanol production plant, will enable the plant to replace about 25 percent of its corn feedstock with agricultural waste feedstocks. AEAFK will test a series of feedstocks for the cellulosic processor, including: corn stover, corn cobs, wheat straw, cotton waste, and sugar cane bagasse. New construction on the facility will include the installation of a distillation column, a molecular sieve, four large 10,000 gallon tanks, and eight 1,500 gallon tanks. This equipment will be used to test the various agri-waste feedstocks. AEAFK will also complete a feedstock and GHG pathway feasibility study for the integrated commercial ethanol facility.

Project Site

The project is located at 4209 Jessup Road, Keyes, CA 95328. The project will take place in a warehouse adjacent to the Cilion ethanol plant in a commercially zoned area. The lot is surrounded by commercial buildings, a grain elevator, a wastewater remediation pond, rail lines, ethanol plant / tanks, and one road.

This facility is located in a nonattainment area for ozone, particulate matter (10 micron), and particulate matter (2.5 micron) pollutants. There is one school, no day care centers, and no health care facilities within a mile of the project site.

Project Impacts and Benefits

The cellulosic ethanol plant potential air emissions will be regulated by the California Department of Environmental Quality Air Quality Division. Regulated emissions will include particulate matter (PM), particulate matter less than 10 microns in diameter (PM_{10}), sulfur dioxide (SO_2), nitrogen oxide NO_x, volatile organic compounds (VOC), carbon monoxide (CO), and hazardous air pollutants (HAPs).

The plant will incorporate state-of-the-art control measures to reduce emissions as a minor source per Prevention of Significant Deterioration and Title V regulations. Emission sources at the plant will include feedstock receiving, storing and handling, milling, fermentation, steam generation, and fugitives.

The transportation of the agricultural waste feedstock to the facility will be coming from multiple sources, with the majority coming from AL Gilbert/Western Milling via railcar and

grain elevator facilities located at the adjacent facilities mentioned. The emissions generated from feedstock transport will be less than the equivalent of producing an extra million gallons per year at the Cilion ethanol plant. The agri-waste feedstock used for cellulosic production will be trucked in from various farms within a 100-mile radius of the plant.

The initial commercial scale plant will operate all control measures planned for future plants resulting in similar potential emission estimates. Best management practices, including Fugitive Dust Control Plans, and bag house units, will control emissions associated with the feedstock and by-product operations. Grinding and milling the straw in the pretreatment process generates a fine dust. The dust is captured in a bag house and periodically reintroduced into the operation at the delignification step. The dust is primarily cellulose and hemicellulose, the two feedstock components used to make ethanol.

The steam generating boilers will use natural gas to run, for which emissions are limited to fewer than 1.15 tons per year. The facility will be constructed with adequate stack heights and airflow rates to reduce any impacts on ambient air. The dispersion properties will lead to offsite impacts less than the applicable federal and state ambient air standards.

If the feasibility portion of this project being funded by the Energy Commission proves to be successful, AEAFK's precommercial phase will provide more than 600 direct and indirect temporary and permanent jobs over a five-year period. Both direct and indirect jobs will be created in Stanislaus County in industries such as wholesale trade, food service, real estate, architectural and engineering services, management and employment services, truck transportation, and many others.

Rationale for Exclusion From Localized Health Impacts Report

AE Advanced Fuels Keyes will not be producing significant amounts of fuel, so the project is not considered a source of emissions. Additionally, Keyes is not considered a low-income community highly impacted by air pollution. Therefore, the project is excluded from the assessment of localized health impacts and the corresponding 30-day public review period.

Aggregate Location Analysis and Community Impacts

Based on the above assessment and CEQA analysis, and considered with the other projects funded under this solicitation, Keyes is not disproportionately affected by this project. Because Keyes is not considered to be a low-income community highly impacted by air pollution, extensive analysis of the surrounding community is not included.

The following table indicates that two or more environmental justice indicators[10] exist in Keyes. Based on the above assessment and CEQA analysis, and considered with the other projects funded under this solicitation, Keyes is not disproportionately affected by this project.

Environmental Justice Indicators

City	Minority	Poverty Level	Unemployment Rate	Age
Keyes		X	X	

Some of the notable benefits from the projects funded and described in previous reports include conversion of fleets to use cleaner alternative fuels, and more efficient and cost-effective methods for biofuel production. This project explores the use of agricultural waste for biofuel feedstock production, and efficient processing of waste products to produce biofuels. In total, the projects funded through the biofuel production solicitation are anticipated to improve the environment and result in socioeconomic benefits by generating jobs and revenue for local communities that would otherwise not be available.

The last table in this addendum provides city-level data for the city project location to give additional insight on the community demographics where the project will be located.

Demographic Data for Biofuel Facilities

(Percentage of total population)

City	Keyes/ Ceres*
Below poverty level	12.9
Ethnicity	
Black	2.7
American Indian or Alaskan Native	1.4
Asian or Pacific Islander	5.4
Hispanic	37.9
White	64.5
Age	
< 5 years	8.6
> 65 years	8.1
Unemployment rate	29.3

Source: Unemployment Information, EDD Labor Market Information Division; Age/ethnicity demographics, U.S. Census