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### ***Proposed Environmental Analysis Workplan for the California Low Carbon Fuel Standard***

#### **I. Introduction**

Staff will analyze the environmental and public health impacts of the proposed rulemaking for the Low Carbon Fuel Standard (LCFS). The analysis will focus primarily on the quantification of air quality-related public health benefits that would result from implementation of the LCFS; we also intend to perform a CEQA equivalent analysis of potential impacts to water, land, and non-air quality related impacts on population within California and analyze any environmental justice impacts that may occur.

In conducting the analysis, staff will address the criteria listed in section 38562 of the Global Warming Solutions Act of 2006 (AB 32 or Act).<sup>1</sup> Since the LCFS will allow the use of several market-mechanisms, staff will also address the criteria listed in section 38570 of the Act.<sup>2</sup>

This document describes in general terms our approaches to conducting the work outlined above.

#### **II. Baseline Determination**

Staff is determining the baseline scenario for the LCFS regulation—the “do nothing” case or “business as usual (BAU).” Even without the LCFS regulation, there are several regulations and programs in place that affect the GHG emissions and costs related to transportation: the federal Renewable Fuel Standard (RFS), the ARB ZEV regulation, the federal Corporate Average Fuel Economy (CAFE) program, and the Pavley regulation. The initial baseline year will be 2010, and staff will extrapolate the BAU case for years 2011 – 2020.

Of particular relevance to the environmental analysis is the Energy Independence and Security Act of 2007 (EISA). EISA enhanced the original federal RFS—which was established by the Energy Policy Act of 2005—by requiring the use of 36 billion gallons of renewable fuels annually in 2022. The federal RFS requirements will result in changes in California transportation fuels. ARB staff is considering reflecting this federal requirement as part of the baseline analysis. For example, if staff assumes that California will receive a proportional share of the low-CI biofuels (roughly 11 percent), an estimated two billion gallons of these alternative fuels would be in the California

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<sup>1</sup> Section 38562 states that, to the extent feasible, any adopted regulations shall: be equitable, ensure activities do not disproportionately impact low-income communities, complement and not interfere with federal and state ambient air quality or toxic air contaminant emission standards, and consider overall societal benefits.

<sup>2</sup> These criteria include, to the extent feasible, the following: (1) consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution; (2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants; and (3) maximize additional environmental and economic benefits for California, as appropriate.

## **DRAFT**

market by 2020. The LCFS might not change the total amount of biofuels used in California but would likely attract more of the advanced biofuels to the State.

### **III. Air Quality Impacts**

#### **A. *Greenhouse Gas Benefits***

Staff will summarize the estimated greenhouse gas benefits in terms of million metric tons of CO<sub>2</sub> reductions by 2020, based on possible compliance scenarios. Several potential compliance scenarios are presented in the “Supporting Documentation for the Draft Regulation for the California Low Carbon Fuel Standard.”<sup>3</sup> Staff is currently evaluating the GHG benefits of these scenarios.

#### **B. *California Air Quality Impacts***

Staff will provide a summary of the estimated impacts of the various compliance scenarios on air quality -- both criteria and toxic air pollutants.

1. *Emissions from Biomass Production, Transport and Distribution* – Staff will estimate emissions from production, distribution, and transport of biomass in California.
2. *Emissions from Alternative Fuel Facilities* – The LCFS does not require that new facilities be built in California or elsewhere. However, the LCFS should incentivize more facilities that are capable of producing low-carbon fuels and some of those are likely to be built in California. Consequently, staff will provide estimated criteria and toxic emissions from new biorefineries and other possible types of fuel production facilities based on permitting requirements (BACT/Offsets) for new facilities in California. This analysis will use data whenever possible from permitted and existing facilities. This analysis will also include a discussion of permitting requirements and a discussion of how emissions might change over time, with technology development. Facilities include, but are not limited to, ethanol production facilities using different feedstocks, biodiesel production facilities, renewable diesel production facilities, and municipal solid waste to fuel production facilities.
3. *Emissions from Alternative Fuel Transport and Distribution* – Staff will estimate emissions from distribution and transport of alternative fuels in California.
4. *Emissions from Existing Refineries* – Staff will describe possible impacts, if any, on existing oil refineries in California due to the LCFS. As part of this analysis, staff will examine possible scenarios where the LCFS could

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<sup>3</sup> This document can be found at: [http://www.arb.ca.gov/fuels/lcfs/101608lcfs\\_supdoc.pdf](http://www.arb.ca.gov/fuels/lcfs/101608lcfs_supdoc.pdf)

## **DRAFT**

result in refinery modifications or utilization changes. Such modifications could include the production of renewable diesel fuel.

The analysis will also include a discussion of the emissions impacts associated with the anticipated decrease in California demand for gasoline and diesel fuel. While the amount of gasoline and diesel used in California may decrease as a result of the LCFS, we do not expect refinery utilization to change significantly through 2020 due to increasing national and international demand.

5. *Emissions from Ports* – Staff will evaluate any emissions impacts associated with increased activity at the various California ports due to the LCFS.

### **C. Motor Vehicle Emissions**

Staff will evaluate and describe the expected GHG and criteria emission impacts on motor vehicles, both on- and off-road, associated with the greater use of lower carbon fuels modeled in the compliance scenarios. We will describe the regulatory structure in place, and estimate whether there will be changes in emissions.

### **D. Public Health Risk and Cumulative Emissions Impacts**

Staff will summarize the potential public health risks and overall criteria and toxic impacts that may occur within California due to the LCFS. This analysis will be based on the emissions estimates prepared above. In conducting this analysis, staff will perform the following tasks to the extent data are available:

1. *Map Fuel Production Facilities* – Staff will present a map of the existing fuel production facilities, including existing conventional fuels and alternative fuels. Staff will also present a list of theoretically possible fuel production facilities by air district based on an assessment of siting based on optimum biomass availability. Note that this analysis does not represent the actual locations or that these facilities would be built; these can only be determined through local land use and permitting decisions. Thus the analysis is intended only to provide indication of possible impacts.
2. *Conduct Cancer and Non-Cancer Risk Assessment for Individual Facilities* – Staff will estimate the potential cancer and non-cancer health risks for various individual facilities based on available data on emissions.
3. *Conduct Cancer and Non-Cancer Localized Cumulative Risk Assessment for Multiple Facilities* – Staff will estimate the potential cancer and non-cancer health risks for multiple facilities located in close proximity to one another to determine the cumulative impacts.

## **DRAFT**

4. *Summarize Regional and Statewide Criteria Pollutant Impacts and Public Health Risk* – Based on possible compliance scenarios, staff will estimate the regional and statewide emissions impacts of criteria pollutants. Staff will also estimate, based on available data and compliance scenarios, the overall health impacts.
5. *Investigate Cumulative Impacts Assessment Method* – As part of ongoing AB32 analysis, ARB staff is developing a method for geographically representing emission densities, as an evaluation aide for already adversely impacted communities. This work is not anticipated to be complete by the adoption of the LCFS, however LCFS staff will continue to track this work and its applicability to future LCFS evaluations and is committed to conducting an analysis as methods develop.

### **IV. Other Environmental Impacts**

Staff will evaluate the potential for other impacts such as water, land, forest, energy, waste disposal, etc. We will work with appropriate agencies to acquire their input and commitment to address non-air issues. For example, we are working with the Water Resources Control Board regarding the impacts on water quality. As feasible, we will identify mitigation measures.