STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

MAJOR REGULATIONS STANDARDIZED REGULATORY IMPACT ASSESSMENT SUMMARY

DF-131 (NEW 11/13)

STANDARDIZED REGULATORY IMPACT ASSESSMENT SUMMARY

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1. Statement of the need for the proposed major regulation.

The California Air Resources Board (ARB) approved the LCFS regulation in 2009 as a discrete early action measure under the California Global Warming Solutions Act of 2006 (AB 32). The primary goal of the LCFS regulation is to reduce the carbon intensity of transportation fuels used in California by at least 10 percent by 2020 from a 2010 baseline, thereby reducing greenhouse gas emissions, among other benefits discussed below. ARB approved revisions to the LCFS in December 2011, which became effective on November 26, 2012, and were implemented by ARB on January 1, 2013.

On July 15, 2013, the State of California Court of Appeal, Fifth Appellate District (Court) issued its opinion in POET, LLC versus California Air Resources Board (2013) 218 Cal.App.4th 681, resulting in a stay of the LCFS. The Court held that the LCFS adopted in 2009 and implemented in 2010 (referred to as 2010 LCFS) would remain in effect and that ARB could continue to implement and enforce the 2013 regulatory standards while taking steps to remedy California Environmental Quality Act (CEQA) and Administrative Procedure Act (APA) issues as required in the ruling.

To address the court ruling, ARB will bring a revised LCFS regulation (LCFS proposal) to the Board for re-adoption in early 2015. The proposed LCFS regulation will contain revisions of the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-CI fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement.

2. The categories of individuals and business enterprises who will be impacted by the proposed major regulation and the amount of the economic impact on each such category.

The proposed Regulation would have an impact on businesses producing, importing, and selling transportation fuels in California. Regulated transportation fuels include the following fuels:

California Reformulated Gasoline (E10 and E85)

- Corn Ethanol
- Sorghum Ethanol
- Cane Ethanol
- Cellulosic Ethanol
- Sorghum/Corn/Wheat Slurry Ethanol
- Renewable Gasoline
- Hydrogen
- Electricity for Light- and Heavy-Duty Vehicles
- CARB Diesel
- Soy Biodiesel
- Waste Grease Biodiesel
- Tallow Biodiesel
- Corn Oil Biodiesel
- Renewable Tallow Diesel
- Liquefied Natural Gas (LNG)
- Compressed Natural Gas (CNG)
- Renewable LNG
- Renewable CNG

3. Description of all costs and all benefits due to the proposed regulatory change (calculated on an annual basis from estimated date of filing with the Secretary of State through 12 months after the estimated date the proposed major regulation will be fully implemented as estimated by the agency).

Benefits:

The LCFS proposal is anticipated to deliver environmental benefits that include a cumulative estimated reduction in the greenhouse gas (GHG) emissions of more than 40 million metric tons of carbon dioxide equivalent (MMTCO2e) from transportation fuels in California from 2016 through 2020. Implementation of the LCFS proposal will also diversify the transportation fuel portfolio, thereby reducing the economic impact of volatile global oil price changes on gasoline and diesel prices in California.

Costs:

The estimated direct cost to regulated parties is highly sensitive to the price of LCFS credits, which are based on the supply and demand for credits in the market and cannot be forecast with certainty, as well the mitigation pathway chosen by biodiesel producers. From 2012 through 2013, when the LCFS standards for gasoline and diesel were declining, the average credit price reported in the LRT was $57. Based on historic credit prices and the fuel volumes that will be required to meet the increasing stringency of the LCFS proposal, ARB assumes a credit price of $100 for the period 2016 through 2020. This method likely over-estimates costs because many (or even most) lower-CI fuels with embedded credits can be generated and secured at costs lower than the market price for stand-alone credits.

4. Description of the 12-month period in which the agency estimates the economic impact of the proposed major regulation will exceed $50 million.

The LCFS proposal was determined to be a major regulation because the direct cost of compliance exceeds $50 million in all years analyzed, 2016 through 2020.

5. Description of the agency's baseline:

For the baseline scenario, ARB constructed a forecast of California fuel prices over the period 2016 through 2023. The fuel prices are based on the 2014 U.S. Energy Information Agency's (EIA) Annual Energy Outlook reference scenario. The baseline does not include the LCFS or the ADF proposal; it does, however, include regulatory measures that influence the types and carbon intensities of transportation fuels consumed in California. These include:

- Advanced Clean Cars (ACC)
- U.S. Environmental Protection Agency's (U.S. EPA) Renewable Fuel Standard 2 (RFS2)
- State and Federal Transportation Fuel Trends
- ARB's In-Use Mobile Diesel Vehicle Regulations

6. For each alternative that the agency considered (including those provided by the public or another governmental agency), please describe:
   a. All costs and all benefits of the alternative
   b. The reason for rejecting alternative

Alternative 1: Gasoline Only Case
A) Costs and Benefits:
This alternative is less stringent than the proposed regulation because it only reduces carbon intensity of gasoline and gasoline substitute fuels, but does not reduce the carbon intensity of diesel and diesel substitute fuels. The emissions reduction benefits of this alternative are lower than those associated with the proposed regulation. At the assumed LCFS credit price of $100, this alternative would reduce the direct cost of compliance compared with the LCFS proposal because regulated parties would not be required to purchase credits for diesel. Excluding diesel and diesel substitute fuels from carbon intensity reduction standards is anticipated to decrease the cumulative number of credits that regulated parties must generate or purchase for compliance in 2016 through 2020 by 12.6 million credits.
B) Reason for Rejection: ARB rejects the gasoline only alternative because this alternative does not achieve the carbon intensity reduction goals of the proposed regulation. This alternative would only achieve a ten percent reduction in the carbon intensity of a portion of transportation fuels. This alternative results in carbon intensity reductions in the light duty fleet only, decreasing the incentive for innovation and investments in low-carbon fuel technologies. This alternative also results in increased emissions of greenhouse gas emissions from the transportation sector, and increased emissions of oxides of nitrogen and PM2.5 when compared with the proposed regulation in all years analyzed.
Alternative 2: Original Carbon Intensity Curve
A) Costs and Benefits: This alternative is more stringent than the LCFS proposal because the annual carbon intensity standards are more stringent from 2016 through 2018. This increased stringency is associated with increased benefits. This alternative also reduces the emissions of PM2.5 and NOx compared with the LCFS proposal. At the assumed LCFS credit price of $100, this alternative would increase the direct cost of compliance because conventional fuels will generate more deficits each year due to the increased stringency of the annual CI reductions required. This alternative is anticipated to increase the cumulative number of credits that regulated parties must generate or purchase for compliance.
B) Reason for Rejection: Although this alternative satisfies the 10 percent CI reduction by 2020 goal of the LCFS proposal, ARB rejects the original benefits alternative because it achieves the CI reduction goal at a higher cost than the proposed regulation and reduces regulatory flexibility.

7. A description of the methods by which the agency sought public input. (Please include documentation of that public outreach).

Since the LCFS adoption, ARB has been in frequent contact with stakeholders and the general public regarding the 2010 LCFS. Recently, the outreach has focused on strengthening the LCFS proposal. In 2013 and 2014, ARB conducted 15 public workshops on regulatory provisions and the re-adoption process. Information regarding these workshops and any associated materials are posted on the ARB website and distributed through a public list serve that includes over 8,000 recipients. At the meetings, which are webcast, available by teleconference, or both, ARB solicits stakeholder feedback on the regulation and the regulatory process.
ARB has also made a concerted outreach effort to seek public input regarding the alternatives for LCFS analyzed for this SRIA.

- May 20, 2014: ARB posted the upcoming May 30, 2014, Public Workshop notification on the LCFS website, which included a solicitation of alternatives.
- May 23, 2014: ARB posted the Solicitation of Alternatives for Analysis in the LCFS Standardized Regulatory Impact Assessment and Under the California Environmental Quality Act on the LCFS website.
- May 30, 2014: ARB solicited public input and alternatives for analysis in the SRIA during the May 30, 2014, Public Workshop.
- June 5, 2014: ARB extended the deadline for the submission of alternatives for analysis in the SRIA. In response, five alternatives to the LCFS proposal were submitted.

The announcements for public workshops regarding ADF were posted on the ARB website and distributed through a listserve that included over 7,000 recipients. All materials presented at the workshops were also posted on the ARB website. The most recent workshops include:

- February 13, 2014: Public Workshop to discuss biodiesel use in extreme non attainment areas and other concepts;
- April 17, 2014: Public Workshop to discuss the regulatory strategy of the ADF proposal; and
- July 1, 2014: Public Workshop to discuss data from recently completed studies.

In addition to continuing efforts to solicit feedback from stakeholders about alternatives, exemptions, and alterations of the LCFS proposal, formal alternatives solicitation processes was implemented. A solicitation letter was sent via listserve and posted on the regulation website.

8. A description of the economic impact method and approach (including the underlying assumptions the agency used and the rationale and basis for those assumptions).

While the direct regulatory costs of the combined proposed regulations were estimated using the price of LCFS credits and the direct costs to comply with the ADF, the indirect costs and economic impacts for both proposed regulations are modeled jointly using a computational general equilibrium model of the California economy known as Regional Economic Models, Inc. (REMI). This is because the implementation of the two regulation is so linked. The REMI model generates year-by-year estimates of the total regional effects of a policy or set of policies. ARB used the REMI PI+ model for this analysis—a one-region, 160-sector model that has been modified by the Department of Finance to include California-specific data for population, demographics, and employment.

The following assumptions are used in the modeling of the proposed regulation:

- LCFS credit price is $100 from 2016 through 2023;
- The full LCFS credit price is reflected in the final price of conventional fuels;
- The full value of the LCFS credit associated with electricity as a transportation fuel is reflected in a reduced electricity rate for electricity consumers;
- LCFS credit values are simulated as a decrease in production cost for natural gas and electricity and an increase for conventional fuels;
- Alternative fuels are priced at parity with their fungible conventional fuel;
- Production of conventional fuels in California remains static due to increasing exports offsetting anticipated reduction in conventional fuel demand in California;
- The volumes and types of fuels in the compliance scenario come on-line as anticipated; and
- Hydrogen is included in the volumes for the compliance scenario but excluded from the expenditure changes due to lack of reliable price data; therefore, any credit value associated with hydrogen is not included in the analysis.

The economic impacts of LCFS and ADF proposed regulations on the California economy are negligible, considering the size and diversity of California's economy. ARB estimates the LCFS and ADF proposals will have a combined impact of reducing California's Gross Domestic Product by less than 0.06 percent annually from 2016 through 2023. The changes to emplyment, investment and personal income are similar in size and direction. ARB interprets these results as small relative to the size of California's $2 trillion economy and the uncertainty regarding inputs, particularly future prices for LCFS credits.

Agency Signature	Date 10/17/14
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