August 28, 2009

To: Mr. Bob Fletcher
Ms. Renee Littaua,
California Air Resources Board

From: Bob Graham
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Re: Comments of Southern California Edison Company to the California Air Resources Board's Public Workshop to Discuss Proposed Changes to the Low Carbon Fuel Standard Regulation

I.

Introduction

Southern California Edison Company ("SCE") is pleased to provide the following comments on the recent public workshop held by the California Air Resources Board ("CARB") staff on August 5, 2009, to discuss the proposed changes to the Low Carbon Fuel Standard ("LCFS") regulation. SCE appreciates the time and effort from CARB staff in holding these workshops and seeking stakeholder input in crafting the State's LCFS policies.

II.

The Regulated Electric Sector Is a Key Player In Reducing the Transportation Sector's Carbon Intensity and Should Be Awarded LCFS Credits for the Benefit of Its Customers.

As a transportation fuel, electricity has a far lower carbon intensity than gasoline or other liquid fuels. As referenced in the LCFS rulemaking, the carbon intensity of electricity as a transportation fuel is between 64 percent and 75 percent below that of liquid fuels.[1] SCE

[1] The LCFS rulemaking, using an Energy Economy Ratio ("EER") of 3.0, showed a 64 percent intensity reduction. With an EER of 4.0, as used in California's Alternative Fuels Plan, the intensity reduction is approximately 75 percent.

encourages CARB to look to the investor-owned utilities ("IOUs") as a key partner in facilitating compliance with the LCFS. By encouraging electrification, both in the automotive transportation sector as well as the non-road sector, IOUs and other load-serving entities ("LSEs") can help reduce the emissions from transportation and aid the liquid fuels sector in achieving its LCFS carbon intensity compliance goal.

A. Reducing Emissions from Transportation Will Impose Additional Costs on the Electric Sector.

Using data provided in a recent EPRI-NRDC study, SCE has forecast an increase in electric sector load of between 16 percent and 20 percent by 2040 resulting from plug-in hybrid electric vehicles only.[2] Such an increase in load brings additional regulatory burdens on the electric sector in the form of direct greenhouse gas ("GHG") compliance obligations and added renewable energy procurement goals. While the electric sector stands ready to help the liquid fuels sector achieve its emission reduction goals, it is unreasonable to ask ratepayers to bear the increase in costs. As such, it is appropriate for the State to provide the electric sector with the proper means and regulatory treatment to offset these costs and encourage increased electrification.

1. Increased Electrification Will Displace GHG Compliance Costs to the Electricity Sector.

Although the anticipated net emission reduction in Californiais expected to exceed 42 MMT,[3] this is a result of a gross decrease in liquid fuels emissions of over 52 MMT and an increase in electric sector emissions of nearly 11 MMT. These are emissions that would

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[2] Electric Power Research Institute and Natural Resources Defense Council, *Environmental Assessment of Plug-In Hybrid Electric Vehicles, Volume 1: Nationwide Greenhouse Gas Emissions, Final Report,* July 2007, *available at* http://mydocs.epri.com/docs/public/000000000001015325.pdf. The SCE calculation was derived from the analysis contained in the EPRI- NRDC study which used the CARB EMFAQ model for California. These calculations apply to California only.

[3] This calculation is for plug-in hybrid electric vehicles only in 2040. See footnote 2. The greenhouse gas emission reduction potential is larger when additional types of electric transportation are included.

otherwise be attributed to the liquid fuels providers. However, as a result of increased electrification, the liquid fuels industry will displace 11 MMT of emissions while realizing a reduced compliance obligation of 52 MMT. Without specific regulatory treatment, the electric sector could actually realize an economic burden as a result of the environmental benefit provided to society.

2. The LSEs Will Face Increased Renewable Energy Procurement Costs as a Result of Electrification.

Currently, California's renewable energy goals anticipate that 20 percent of the electricity used for retail load will come from renewable sources.[4] While SCE supports the State's renewable energy goals, the increased renewable energy procurement that will result from the increased electric transportation load will come at an added cost to customers. Because procurement costs rise as SCE's load increases, the average renewable procurement cost of serving the electric transportation load will also rise as the load increases.

B. The LCFS Credits Should Be Awarded to Regulated Utilities for the Benefit of Their Customers, Not to Unregulated Third Parties.

LCFS credits can be earned by the providers of low carbon fuels for the purpose of reducing the carbon intensity of high-carbon fuel providers. By selling the LCFS credits associated with the electricity fuel provided by LSEs, either into the LCFS market or the Assembly Bill ("AB") 32 allowance market, LSEs can mitigate these added costs discussed above. Because the electric sector will be instrumental in reducing emissions from the liquid transportation fuels sector, LCFS credits represent a meaningful and appropriate opportunity to offset the cost of providing this benefit to society.

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[4] While the AB 32 Proposed Scoping Plan recommends a 33 percent renewable energy procurement goal, the current statewide renewable energy goal is 20 percent.

California IOU rates are regulated by the California Public Utilities Commission ("CPUC"). Under this regulatory structure, the IOUs' costs and profits are shaped by the CPUC's policies. The disposition of the monetized value of LCFS credits would also be determined as a matter of CPUC regulatory directive.[5] As an offset to the cost of providing electricity service, SCE has advocated, and anticipates that the CPUC would use the LCFS value to offset the cost of serving this additional load rather than allowing the IOUs to use these credits to increase profits. This solution will send the correct price signals to consumers by increasing the price differential between electricity and liquid transportation fuels.

Third-party infrastructure providers can offer no such regulatory structure. Only by becoming regulated retail utilities can third-party infrastructure providers reasonably assure CARB that the LCFS value will flow back to customers. Currently, there is no indication that these third-party providers intend to return LCFS value back to customers. These third-party infrastructure providers will be the customers of regulated utilities. Awarding LCFS credits to the regulated utilities will enable them to reduce electric transportation charging rates for all electric transportation customers, including the third-party providers.

SCE also believes that the LCFS regulation should implement state policy consistently and objectively. The Executive Order[6] and Governor's Office White Paper[7] envisioned that providers of transportation fuels would receive LCFS credits for exceeding the carbon intensity performance standard. However, in its initial position, CARB has proposed providing LCFS credits to infrastructure providers. Unless these infrastructure providers become regulated utilities, providing LCFS credits to them would be inconsistent with the policy directive provided by the Governor.

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[5] The CPUC has recently issued R.09-08-009 (Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emissions Reductions Goals) to evaluate issues related to electric transportation.

[6] Governor's Executive Order S -01-07, point 4, *available at* http://gov.ca.gov/executive-order/5172/.

[7] Governor's White Paper, *The Role of a Low Carbon Fuel Standard in Reducing Greenhouse Gas Emissions and Protecting Our Economy*, *available at* http://www.arb.ca.gov/fuels/lcfs/lcfs_wp.pdf.

III.

The LCFS Regulation Should Revisit the Eligible Non-Road Electric Transportation Vehicles and Equipment.

A. CARB Should Expand Its List of Non-Road Electric Technologies Eligible to Generate LCFS Credits.

On April 23, 2009, CARB approved Resolution 09-31 on the Low Carbon Fuel Standard.[8] In the resolution, CARB directed the Executive Officer and stakeholders to work together to "evaluate the feasibility of generating credits for electricity used in nonroad transportation sources, such as new categories and applications of electric forklifts and other similar nonroad vehicles and equipment, and propose amendments, if appropriate, to the regulation by December 2009."[9] At their August 5, 2009 workshop, CARB staff suggested a possible list of eligible non-road electric technologies. SCE recommends a more complete list, as there is potential for greenhouse gas reductions in many additional categories and applications of electric non-road technologies, ranging from categories with less than one percent electric market share to applications with over 75 percent electric market share.

Regulated parties need more certainty that the specific technologies they are supporting will be eligible. SCE requests that CARB add to the LCFS Regulation the following language containing a list of eligible non-road electric technologies[10] as follows:

> "Eligible off-road or non-road electric transportation and off-road equipment include: truck-stop and truck parking space electrification; electric transport refrigeration units (of all sizes); electric rail, including dual-mode rail, magnetic levitation systems, and traditional electric rail supplied by overhead electric

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8 State of California Air Resources Board, Resolution 09-31, April 23, 2009.

9 *Id.* at 17.

10 A category of non-road technologies typically has multiple types of grid-connected electric non-road technologies, including battery-powered, corded-electric, various hybrid systems, or overhead wire.

catenaries; electric agricultural vehicles including tractors, electric recreational transportation including boats; electric industrial vehicles, including lift trucks, tow tractors and tugs, burden and personnel carriers; airport ground support equipment; cargo handling equipment; turf trucks; mining equipment; boats; sweepers; scrubbers; and burnishers."

SCE recommends that the Executive Officer of CARB be given the power to supplement this list with additional electric non-road transportation technology applications or categories when petitioned.

Some of the devices or technologies listed in SCE's proposed language are currently powered electrically. However, expanding the list of eligible non-road devices will allow for increase electrification in the non-road sector, and further reduce the carbon intensity of fuels for these technologies. At the August 5th LCFS workshop, CARB staff presented a number of excellent reasons for adding electric non-road technologies to the list of technologies eligible for generating LCFS credits. For example, the additions will promote the use of lower-carbon-intensity fuels for non-road transportation, encourage the development and use of electric technologies, diversify the fuel pool, and reduce GHG emissions.

Increased electrification will also result in additional co-benefits, including a reduction in outside and indoor air pollutants. Further, because other fuels such as biodiesel, hydrogen and natural gas are eligible to generate LCFS credits in non-road applications, adding electrics will make the regulation fuel neutral.

At the August 5th workshop, CARB staff presented industry estimates of the potential GHG displaced (in $MMTCO_2e$) in 2020 from non-road transportation[11] In their presentation, CARB staff estimated that forklifts could displace 0.05 to 1.18 $MMTCO_2e$, truck stop electrification could displace 0.20 to 0.57 $MMTCO_2e$, and sweepers and scrubbers could

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[11] Low Carbon Fuel Standard Workshop: *LCFS Credits for Off-Road Electric Transportation*, August 5, 2009 at Slide 5, "Industry Estimates of Potential Credits," referencing TIAX, LLC (2008), Electric Transportation and Goods Movement Technologies in California: Technical Brief, Revised September 2008.

displace 0.04 to 0.21 $MMTCO_2e$, for a total of between 0.29 to 2.50 $MMTCO_2e$ displaced by non-road electrification.[12] Given that these industry reports excluded several applications and categories of non-road technologies, the potential quantity of displaced GHG emissions (in $MMTCO_2e$) would increase significantly if additional non-road technologies were added to the LCFS as advocated by SCE.

For example, a TIAX study recently made available on the CARB website[13] estimates the additional GHG reduction potential by 2020 of non-road technologies. This list includes truck stop electrification, electrified truck refrigeration units, airport ground support equipment, class 1 and 2 electric forklifts, electric tow tractors and industrial tugs, electric sweepers and scrubbers, class 3 electric forklifts, electric personnel and burden carriers, and electric turf trucks. The study estimates that these technologies could reduce GHG emissions by 3.17 to 4.04 million short tons per year, or 2.876 to 3.665 $MMTCO_2e$. [14] The additional non-road electrification technologies listed above have the potential to create a substantial reduction in GHG emissions and should be included in the LCFS.

B. Certain Technologies Are Either Fully Electric or Impracticable and Should Therefore Be Ineligible for LCFS Credits.

Not all electric technologies should be eligible for generating LCFS credits. Ineligible technologies should include those that are already fully electric, as electricity already claims a 100 percent market share. For example, electric golf carts, electric forklifts at cold storage warehouses, electric light rail, electric subways, and electric high-speed passenger rail are already 100 percent fueled by electricity. In addition, those technologies already mandated by CARB for electrification should be considered ineligible, such as golf carts and ship-to-shore

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[12] *Id.*

[13] TIAX LLC, *Electric Transportation and Goods Movement Technologies in California: Technical Brief*, Revised September 2008, at A-5-5, Table A-6.B, *available at* http://www.arb.ca.gov/regact/2009/lcfs09/tiax.pdf.

[14] *Id.*

electrification (cold-ironing). Other technologies, such as electrification of lawn and garden equipment, may prove impracticable for the LCFS. SCE encourages CARB to consider other fuel-neutral regulatory solutions to advance the further electrification of these technologies.

C. Innovative Solutions Exist to Address the Problem of Accounting for Existing Non-Road Electric Transportation Vehicles and Equipment.

CARB staff has raised concerns about the proper method of accounting for categories of off-road electric transportation equipment that already has significant electric market penetration. SCE recommends the following principles and goals for evaluating solutions to this issue.

- Implementation of the LCFS regulation should facilitate compliance in a simple and consistent way. New installations of technologies should not be treated differently from replacements. CARB should avoid unreasonable requirements such as mandating separate charging stations based on the equipment's vintage.
- SCE urges CARB to evaluate solutions that work in the long term. CARB should look to a time when alternative fuels in general will have a significant market share, and fleet turnover will create new accounting challenges.
- CARB should examine other programs, such as the Carl Moyer program or utility-based energy efficiency programs, for potential solutions to the challenges faced when implementing the LCFS in non-road applications.
- SCE encourages CARB to expand its current internal combustion engine non-road data collection activities to include trends and technological developments in electric non-road applications. Collecting this data will expand the CARB database on these electric technologies and further enable CARB to evaluate the performance of the LCFS.
- The regulation should be straightforward and workable without being too bureaucratic or complex.

IV.

Conclusion

SCE thanks CARB and its staff for their diligent efforts in attempting to address the various issues raised by the implementation of the LCFS regulations. SCE urges CARB to adopt regulations which are in line with the principles SCE set forth herein.