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April 9, 2018

By Electronic Submittal

Clerk of the Board
California Air Resources Board
1001 I Street, Sacramento, California 95814

Re: Proposed Amendments to the Low Carbon Fuel Standard Regulation

Dear Clerk of the Board:

I write on behalf of the San Francisco Bay Area Rapid Transit District (“BART”) to offer comments to the California Air Resources Board (“CARB”) on CARB staff’s proposed amendments to the Low Carbon Fuel Standard (“LCFS”) regulation, 17 Cal. Code. Regs. §§ 95480-95497 (“LCFS Regulation”).

BART is a public transportation system serving the San Francisco Bay Area with 100% electric rapid transit passenger rail service. BART service is among the most significant factors affecting the carbon intensity of the transportation sector in the Bay Area—BART provides over 430,000 passenger trips each weekday, and nearly 129 million trips annually. As the operator of a “fixed guideway system,” BART generates credits under the LCFS Regulation.

BART is actively pursuing a goal of reducing both the energy consumption and greenhouse gas (“GHG”) emissions associated with its transit service, while also seeking to increase its ridership. For example, pursuant to the unique authority granted to BART under Public Utilities Code Section 701.8, it has aggressively procured energy to power its system directly from low- and zero-GHG emitting sources. Specifically, BART has directly or indirectly entered into multiple power purchase agreements (“PPAs”) for electricity delivered from “specified sources” or specific “asset-controlling suppliers” under CARB’s Cap and Trade Program in order to significantly reduce the carbon intensity (“CI”) of BART’s electricity supply portfolio. Through these efforts, BART reduced the CI of its electricity supply portfolio for the first 10 months of 2017 to approximately 6.78 grams CO₂ per megajoule (“MJ”), which is less than 7% of the CI for average grid electricity currently recognized in the LCFS Regulation.¹ In addition, BART has entered into long-term PPAs with new solar and wind electric generating facilities in California that are expected to provide approximately 90% of BART’s supply portfolio beginning in 2021.

¹ 17 C.C.R. § 95488, Table 6 (Tier 2 Lookup Table for Gasoline and Diesel and Fuels that Substitute for Gasoline and Diesel, assigning electricity a CI value of 105.16 gCO₂e/MJ).

While BART supports many of the proposed changes to the LCFS Regulation, it believes that the draft amendments to the LCFS Regulation should be clarified in several respects. Specifically, CARB should:

1. Modify the proposed LCFS Regulation to incorporate a new Lookup Table Fuel Pathway in Table 7-1 for electricity used as a transportation fuel that is generated by specified sources other than wind and solar;
2. Clarify that Lookup Table Fuel Pathways for electricity may be claimed by fixed guideway system operators;
3. Clarify the requirements for book-and-claim accounting for low- and zero-CI electricity reported by eligible fuel reporting entities; and
4. Clarify that Lookup Table Fuel Pathways may be claimed for the corresponding portion of a fuel reporting entity's electricity portfolio

BART's concerns and recommendations are set forth in full below.

1. CARB Should Modify the Proposed LCFS Regulation to Incorporate a New Lookup Table Fuel Pathway in Table 7-1 for Electricity Used as a Transportation Fuel that is Generated by Specified Sources Other Than Wind and Solar

BART appreciates that CARB's draft LCFS Regulation would recognize procurement of clean electricity from solar or wind generation sources. Proposed Section 95488.5, Table 7-1 of the draft LCFS Regulation includes a new lookup table pathway ELCR, which assigns "[e]lectricity that is generated from 100 percent solar or wind supplied to electric vehicles in California" a carbon intensity value of zero.

While this recognition of electricity produced by wind or solar resources is an excellent start, the proposed LCFS Regulation should also recognize the efforts of BART and other fixed guideway system operators to reduce the GHG intensity of their public transportation service through the purchase of low or zero carbon intensity electricity generated by other types of generating facilities. As described in Section 95480 of the LCFS Regulation, the purpose of the program is to reduce the carbon intensity of the transportation fuel used in California. While this is certainly accomplished by displacing grid average electricity with electricity from wind and solar resources, it can also be accomplished by displacing grid average electricity from other resources with a carbon intensity that is lower than that of grid average electricity. Thus, the amended LCFS Regulation should encourage procurement of other low or zero carbon intensity sources of electricity as a transportation fuel.

BART acknowledges that some sources of electricity require additional analysis to determine an appropriate carbon intensity value. However, for facilities that qualify as "Specified Sources" under CARB's Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, 17 Cal. Code Regs. §§ 95801-96022 ("Cap and Trade Regulation"), CARB has already performed much of that analysis. Under the Cap and Trade Regulation, CARB assigns Specified Sources a unique "Emission Factor" intended to reflect the GHG emissions of that generator. Specified Sources

include “Asset Controlling Suppliers.” 17 Cal. Code Regs. § 95802. Asset Controlling Suppliers are entities that own, operate, or exclusively market a system of electricity generating facilities. 17 Cal. Code Regs. § 95802(a). Asset Controlling Suppliers report comprehensive system and emissions information to CARB, and are assigned a system-wide Emissions Factor by CARB associated with all wholesale electricity sales from the system.

The Emissions Factor assigned by CARB to Specified Sources under the Cap and Trade Regulation is the best available proxy for reporting the carbon intensity of wholesale purchases from Specified Sources under the LCFS Regulation because the data reported pursuant to the Cap and Trade Regulation represents the best available data relating to those electric generating facilities. Wholesale purchasers of Specified Source electricity typically do not have access to other or more detailed information about the emissions of the generating facility. Agreements for the wholesale purchase of electricity from Specified Sources (including Asset Controlling Suppliers) rely on the CARB-assigned identifier for each source to verify the origin of the electricity. In the case of electricity purchased from Asset Controlling Suppliers, the CARB-assigned identifier corresponds to the Asset Controlling Supplier’s portfolio as a whole, so the specific generating facilities within the Asset Controlling Supplier’s portfolio that are providing the electricity at any given time are not typically identified. As a result, wholesale purchasers rely on the Emissions Factor assigned to the entire system by CARB to monitor and report on the overall CI of their electricity portfolios. Thus, because the purchaser typically does not have access to detailed facility-specific information, it could be impracticable or impossible for the purchaser to prepare in advance a Tier 2 pathway application that describes lifecycle emissions associated with that electricity on a facility-specific basis in more detail than the Emissions Factor already assigned by CARB under the Cap and Trade Regulation. Additionally, transactions for deliveries of electricity from Specified Sources are often short term, making the development of a Tier 2 application impractical even in the case where the Specified Source is a single generating facility rather than an Asset Controlling Supplier.

Yet, as described above, many Specified Sources that are not wind or solar clearly have significantly lower GHG emissions than grid-average electricity. Moreover, to facilitate the LCFS program’s goals, the lower carbon intensity of these non-wind, non-solar Specified Sources as compared to grid-average electricity should be recognized within the LCFS program. In the absence of detailed facility-specific information for Specified Sources, CARB should add new lookup table pathways to Table 7-1 of the LCFS Regulation for electricity from non-wind, non-solar Specified Sources that is supplied as a transportation fuel to fuel reporting entities, and assign those lookup table pathways carbon intensity values equal to the Emissions Factors assigned them by CARB under the Cap and Trade Regulation.

2. CARB Should Clarify that Lookup Table Fuel Pathways for Electricity May be Claimed by Fixed Guideway System Operators That Meet Applicable Requirements

To avoid potential ambiguity, the draft LCFS Regulation should be modified to make clear that all lookup table pathways for electricity in draft Section 95488.5, Table 7-1 apply to the use of electricity as a transportation fuel for fixed guideway systems, in addition to electric vehicle charging. Currently, Table 7-1 of the draft LCFS Regulation identifies pathway ELCG (for grid average electricity), pathway ELCR (for 100 percent solar or wind-generated electricity), and ELCT (for electricity supplied under time-of-use provision), and each of these pathways specify that they may be used to report electricity supplied to electric vehicles. However, both the current LCFS Regulation and the draft revised LCFS

Regulation define the term “electric vehicles” to include only “Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles.” Thus, as defined, the term “electric vehicle” does not include fixed guideway systems. Historically, however, the lookup table values for electricity have applied to the use of electricity as a transportation fuel for fixed guideway systems. In addition, BART understands, based on conversation with CARB staff, that staff intended the electricity fuel pathways in Table 7-1 to also be available to fuel reporting entities that are fixed guideway system operators, in addition to fuel reporting entities providing electric vehicle charging. CARB should clarify that this was its purpose by specifically referencing fixed guideway systems (as well as any other appropriate fuel reporting entities that use electricity as a transportation fuel) in the description of those pathways in draft Table 7-1.²

The requested clarification is also consistent with existing CARB policy. CARB has long intended that electricity-fueled fixed guideway public transportation systems be treated similarly to on-road electric vehicles under the LCFS Regulation. For example, in staff’s Initial Statement of Reasons for Proposed Rulemaking – Proposed Re-Adoption of the Low Carbon Fuel Standard (December 2014) (“2015 ISOR”), staff noted that the Board directed staff in Resolutions 09-31 and 11-39 to evaluate the feasibility of issuing LCFS credits for non-road, electricity based transportation sources, including mass transit. 2015 ISOR at ES-14. In response to this Board request, staff identified fixed guideway transit systems and electric forklifts as categories of off-road electric transportation that use significant and quantifiable amounts of electricity for fuel. *Id.* BART believes that CARB remains fully committed to including fixed-guideway systems in the LCFS regime, and supports this policy approach. Accordingly, draft Section 95488.5, Table 7-1 should be amended to clarify that the lookup table pathways for electricity used as a transportation fuel are available to fixed guideway system operators.

3. CARB Should Clarify the Requirements for Book-and-Claim Accounting for Low and Zero-CI Electricity Reported by Eligible Fuel Reporting Entities

Proposed Section 95488.8(i)(1)(B) allows for book-and-claim accounting to be used to report low-CI electricity used as a transportation fuel, where the electricity is supplied by contractual relationship that meets certain requirements. Paragraph 1 of that section requires that the “Electricity is generated using equipment owned by, or under contract to the pathway applicant for all environmental attributes of the project.” Read literally, this language could be interpreted to mean that the buyer is required to purchase all of the environmental attributes of a given project, even if the buyer is purchasing only a portion of the output from that project. However, BART believes that CARB staff intended for this requirement to be

² Similarly, CARB should clarify that other provisions of the LCFS Regulations referencing the lookup table electricity fuel pathways available to electric vehicles are intended to apply to fixed guideway systems as well. Sections that should be clarified include proposed Section 95488.1(b)(2)(B) (reference to “Electricity associated with time-of-use pathways for EV charging and hydrogen production through electrolysis”); proposed Section 95488.5(b)(1) (“The following information must be submitted with applications for the Lookup Table pathway for electricity generated from solar or wind supplied to EVs and time-of-use electricity supplied to EVs or hydrogen electrolyzers”); proposed Section 95488.5(d)(1) (“In order to reflect the rapidly evolving portfolio of electricity generating resources in California, the Executive Officer will update the “California Average Grid Electricity Supplied to Electric Vehicles” Lookup Table pathway CI value on an annual basis.”); proposed Section 95488.5(f) (“The Executive Officer calculates a TOU carbon intensity Lookup Table each quarter for California grid electricity that may be used for reporting electric vehicle charging and hydrogen produced via electrolysis.”), proposed Section 95488.8(i)(1)(A) (“Reporting entities may report electricity dispensed to electric vehicles or as an input to hydrogen production . . .”).

satisfied through commercial transactions where the buyer purchases all of the environmental attributes associated with the electricity it is purchasing.

CARB staff should clarify this regulatory language to make clear that it requires only the purchase of all environmental attributes associated with the electricity purchased by the buyer, and not all of the output of a given facility.

4. CARB Should Clarify That Lookup Table Pathways May Be Claimed for a Portion of a Fuel Reporting Entity's Electricity Portfolio

Many fuel reporting entities that report electricity used as a transportation fuel procure their electricity from a portfolio of various sources. A fuel reporting entity may find that part, but not all, of its electricity procurement portfolio qualifies for reporting under a particular lookup table pathway. For example, a fuel reporting entity might procure sixty percent (60%) of the electricity it uses for transportation fuel from solar-powered electric generating facilities, with the remaining forty percent (40%) procured from non-specific sources. The draft LCFS Regulation is unclear on how a fuel reporting entity should report its electricity use in this case.

Based on a review of the proposed LCFS Regulation revisions as a whole, BART believes that CARB intends that a fuel reporting entity will be authorized to submit a lookup table fuel pathway application under draft Section 95488.5 for a portion of its electricity portfolio, provided that it adequately demonstrates that such electricity meets the requirements of Section 95488.8(h) (for renewable, low-CI, or zero-CI electricity directly consumed in the production process) or Section 95488.8(i) (for renewable, low-CI, or zero-CI electricity that meets the requirements for book-and-claim accounting), as well as any other applicable fuel pathway application requirements set out in draft Section 95488.8. BART understand that a fuel reporting entity may therefore submit several fuel pathway applications with respect to distinct portions of its overall electricity portfolio. Using the example described above, BART's understanding is that the fuel reporting entity could submit a fuel pathway application for the sixty percent (60%) of the portfolio that is supplied from a solar-powered electric generating facility and apply the associated CI of 0 for this portion of its portfolio, while reporting the remaining forty percent (40%) of the portfolio as grid-average electricity and applying the associated CI of 93.42. BART respectfully requests that CARB clarify, either in the draft LCFS Regulation or staff's Final Statement of Reasons, that this understanding of the draft LCFS Regulation is correct.

Please contact me or my colleague Andrew Mayer (e-mail: amayer@winston.com; tel.: (415) 591-6816) with any questions or concerns about these comments. Again, BART fully supports CARB's goal of reducing California's GHG emissions, and to this end appreciates CARB's efforts to continue to improve the LCFS Regulation.

Regards,

/s/ Thomas Solomon

Thomas W. Solomon