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October 17, 2019

Mary D. Nichols, Chair
California Air Resources Board
1516 Ninth Street
Sacramento, CA 95814

RE: Proposed 2019-20 Funding Plan for Clean Transportation Incentives

Dear Chair Nichols:

On behalf of the Center for Transportation and the Environment's (CTE) I urge your favorable consideration of amendments to the proposed 2019-20 Funding Plan that are necessary to bring Fuel Cell Electric Buses (FCEBs) to full commercialization and provide critical infrastructure funding for public transit operators.

Although the Innovative Clean Transit Rule (ICT Rule) has been adopted and transit operators are planning for a zero-emission future, there remain significant funding obstacles for zero-emission charging and hydrogen fueling infrastructure. The 2019-20 Funding Plan proposes drastic changes that will impact public transit's ability to implement the ICT Rule. In short, the Plan would eliminate the HVIP infrastructure funding enhancement and excludes public transit projects from competing for pilot project funding. CTE urges the Board to reject these changes, and amend the plan to incorporate the following items:

- **Large Scale Deployment Pilot Project**

Allow the transit industry to propose a large-scale pilot project that could either be one or two agencies building fleets of 50 to 100 buses, or a consortium of four or five agencies deploying 100 or more FCEBs and hydrogen infrastructure. Assuming proposed HVIP funding of \$240,000 per bus and the elimination of infrastructure enhancement funding, this pilot project would require \$20 million to build multiple high-capacity hydrogen stations and maintenance facility upgrades.

These pilot funds could also be used to leverage funding from the California Energy Commission (CEC). CEC has adopted their FY 19-20 "Clean Transportation Investment" Program, earmarking \$30 million for "Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure." Complementary CARB and CEC funding will enable the success of this initiative.

The goals of this pilot would be to lower vehicle prices, demonstrate large-scale operation, and increase the number of transit agencies operating FCEBs.

- **Prioritize HVIP for Public Transit Fleet Transition**

Clean Truck & Bus Vouchers: The HVIP vouchers continue to be a critical component for transit operators to transition to zero-emission fleets and to stay ahead of the ICT purchase mandate deadlines. In order to accelerate the transition to zero-emission public transit fleets the HVIP must incorporate the following elements:

- **Continue providing infrastructure enhancement funding** in the voucher program for public transit operators. With ICT deadlines approaching, the enhancement funding is the only source of infrastructure funding available to public transit operators. CARB should also consider partnering with the CEC on creating a joint infrastructure funding program for transit operators.
 - **Earmark HVIP funding** for transit agencies, and particularly for consortium purchases made by two or more transit agencies that demonstrate a large-scale deployment and reduced prices through a procurement of 100 or more buses. This is necessary to address the uncertainty of voucher availability during the lengthy FTA-required public procurement process that private entities are not required to follow.
 - **Allow the total infrastructure rebates attributed to a consortium purchase of FCEBs to be distributed to consortium partners who have the greatest need.** Members of the consortium who already have hydrogen stations with capacity would be able to direct their share of infrastructure funding to help build two or three new stations at agencies launching a large-scale startup deployment.
- **Modify the CARB 3-Year Investment Plan so that it does not assume zero-emission buses are commercially viable today, or in FY 20-21.** Commercialization is possible, but not until buses and fueling stations become more affordable, most likely in 2022 or 2023. Battery-Electric Buses do not have sufficient range, and FCEBs, which are exceeding a 300-mile range in passenger service, are still too costly. Infrastructure costs for both Battery-Electric Buses and FCEBs are still a very huge obstacle to commercialization.

CTE has worked closely with the California Air Resources Board (CARB) on the development of zero-emission heavy-duty vehicles and fueling stations. In 2016, CARB awarded CTE over \$22 million in Low-Carbon Transportation Funds to launch a pilot project to move FCEBs and heavy-duty fuel cell technology closer to commercialization. Two high-capacity hydrogen fueling stations are close to completion. The larger of the two will fuel up to 50 buses in an eight-hour transit fueling window. The second station will support 30 or more buses in a similar time period. This is nearly the same speed of fueling as diesel and CNG buses.

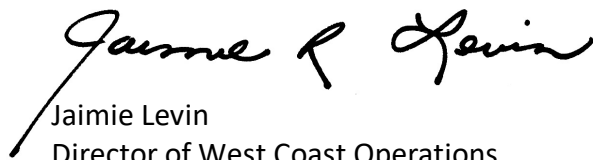
The new FCEBs in service at AC Transit and Orange County Transportation Authority (OCTA) are demonstrating in excess of a 300-mile range, enabling these vehicles to operate as one-to-one replacements for diesel and CNG buses on all of AC Transit's and OCTA's routes.

Another key outcome resulting from CARB's investment was to drive down the cost of the buses by 50% from previous models, to less than \$1.2 million per bus.

The advancements made by this pilot project can be further leveraged by scaling up a second pilot project to 100 buses, which will drive down the cost of FCEBs by an additional 30%, to \$850,000. Increasing the demand for hydrogen will also promote increased supply and lower energy prices. However, the primary obstacle facing large-scale deployments is the need for infrastructure funding to support fueling stations and upgrades to diesel and CNG maintenance facilities to safely work on hydrogen.

The advancements in FCEB technology have a direct link to advancing the use of fuel cells and hydrogen fueling systems for truck and freight applications, but timing is critical in order to deliver price competitive buses and fueling infrastructure. Therefore, on behalf of CTE, we encourage your favorable consideration to address the infrastructure gap facing public transit properties.

Sincerely,



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