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Air Liquide comments 19-TRAN-02 Transit

Additional submitted attachment is included below.

April 24, 2020

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Air Liquide Comments: 19-TRAN-02 *Draft Concept Document ZEV Transit Fleets*

Dear California Energy Commission Representatives:

Air Liquide would like to take the opportunity to comment on the design concepts outlined in 19-TRAN-02: *Draft Concept Document ZEV Transit Fleets*. Air Liquide is active in the California mobility market as a hydrogen station owner and as a hydrogen supplier into the broader transportation market. Infrastructure for refueling hydrogen fuel cell vehicles is the limiting factor in enabling a broader rollout of this technology and in the transit markets the state can play a critical role in enabling broader adoption with these investments. Our comments seek to further strengthen the program and to help insure its continued success. Our experiences in working with the state on implementing H2 refueling for light, medium, and heavy duty applications have brought many lessons learned that we believe are directly applicable to the Transit market.

Before proceeding with the specifics of information requested in the Plan, it is appropriate to thank the CEC and their staff for the continued open dialog and engagement in the ongoing programs. It is clear that stakeholder inputs in the areas of market development, renewable fuel production, and technology neutrality have been thoughtfully considered and are reflected in these latest concepts.

Balanced Technology Approach to Awards

To achieve optimal effectiveness of California's available investment funds, and to meet the state's desired goals for transportation, energy, and the environment, a variety of technologies will be needed to meet the needs of the Transit markets. While BEVs can provide solutions for short route, low utilization, and low capacity applications, FCEVs are needed to meet the needs of the high mileage, high utilization, and large capacity agencies. Both technologies will be needed to enable broad adoption in this market and this should be reflected in state investments for the programs outlined in 19-TRAN-02.

Provide Broad Flexibility for Transit Agencies to Meet Project Requirements

In the case of LDV stations, the CEC program for funding hydrogen stations has been very prescriptive with respect to station location and performance criteria. For the LDV driver, this is essential to ensure the program delivers a robust network with consistent fueling experiences and optimal geographic coverage. In our experience with Transit agencies, we find there is much more diversity in route coverage, operating requirements, administrative methods, and budgetary constraints. For this reason, we recommend that CEC be flexible in their requirements with respect to cost share, vehicle fleet size, shared resources, and refueling technical requirements as outlined below:

> <u>Cost Share.</u> We believe that the 50% cost share outlined in the draft concepts is restrictive and will prevent many transit agencies in disadvantaged regions of the state from making strong

proposals. If program expenses eligible for cost share were expanded to include vehicle investments and operating expenses, the state will likely see stronger proposals. These eligible expenses should only count toward project cost share and not reduce the funds available for infrastructure and could provide options for transit agencies to meet the program requirements while also meeting their strict budgetary constraints. In the case of operating expenses, an estimate over the first five years should be eligible as cost share.

Vehicle fleet size. The current design concepts call for fleet sizes in the 50-100+ vehicle range which is appropriate for this level of funding. In order to insure that the infrastructure is properly sized for these large fleets, we would like to insure that transit agencies have the opportunity to invest in these vehicles over a reasonable period of time following the installation of refueling stations and do not require this number of vehicles at the time of proposal or start-up. Enabling agencies to invest over time will insure that infrastructure investments are properly sized and prioritized within agency budget planning.

Shared resources. In order to maximize the impact of the state's investment, we encourage proposals that share infrastructure resources across multiple agencies. This would allow for smaller agencies/fleets to combine resources and insure that infrastructure utilization is maximized and to meet the higher level awards available for larger agencies.

Technical requirements. Refueling infrastructure for transit agencies need to have technical performance specifications that match the needs of the proposing agency. We encourage the CEC to allow the agencies flexibility in determining how and when their vehicles are refueled and to work with the infrastructure providers to optimize station designs around cost, performance and reliability. In addition, we recommend that flexibility in H2 supply to stations be considered. Liquid, gaseous, onsite and centralized production should be considered eligible and justified based on providing the lowest cost, most reliable, low-carbon fuel.

We appreciate the opportunity to comment on these program concepts and for your consideration of our suggestions. If you have any questions or comments on our approach, please contact me at any time.

Sincerely,

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