DOCKETED	
Docket Number:	18-ALT-01
Project Title:	2019-2020 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program
TN #:	229354
Document Title:	California Air Resources Board Comments Regarding the 1920 Clean Transportation Program Investment Plan
Description:	N/A
Filer:	System
Organization:	California Air Resources Board
Submitter Role:	Public Agency
Submission Date:	8/9/2019 3:48:03 PM
Docketed Date:	8/9/2019

Comment Received From: California Air Resources Board
Submitted On: 8/9/2019
Docket Number: 18-ALT-01

CARB Comments Regarding the 19/20 Clean Transportation Program Investment Plan

Additional submitted attachment is included below.

coming decades, it is important to support multiple ZEV technologies. A key consideration is the variety of use cases in the consumer light-duty vehicle market. Different consumers have different needs in terms of vehicle features and capabilities, and have varying access to zero-emission fueling opportunities. For example, residents in apartment buildings may not have as easy and reliable access to charging at home as those who live in a single-family house. Some drivers are comfortable with small, efficient vehicles for short daily commutes, while others purchase their vehicle for longer travel or large families, or need vehicles that can carry heavy loads and be used for work and recreational purposes. Battery Electric Vehicles (BEVs) and FCEVs complement each other well in the vehicle marketplace; where one of these options may not work as well for a given application, the other typically is well-suited. For this reason, FCEVs and BEVs in the State's strategy are seen as complementary consumer options that will work well together towards the ultimate goal of fully replacing conventionally fueled vehicles.

With this background in mind, CARB is encouraged that the Investment Plan includes a full allocation of the maximum $20 million allowable under Assembly Bill (AB) 8 (Perea, Chapter 201, Statutes of 2013) for hydrogen fueling infrastructure. This is in agreement with CARB's analysis of needs and recommendations in the *2019 Annual Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development*. Continued station deployment through the Clean Transportation Program was found to be necessary to support the numbers of light-duty FCEVs that auto manufacturers plan to deploy in the near term, and will be an instrumental part of achieving the goal of 200 stations by 2025, per Executive Order (EO) B-48-18.

Achieving these ambitious goals will require large-scale market transformation from early commercial deployment to full-scale market development. Such a transition requires certainty within the available State funding programs to attract increasing

proportions of private investment and progress towards a future where the light-duty hydrogen fueling industry is an economically attractive investment and self-sufficient. CARB notes that the *Hydrogen Draft Solicitation Concepts for Light-Duty Hydrogen Fueling Infrastructure* (Energy Commission Docket 18-HYD-04) includes the concept of a multi-year funding program that enables applicants to propose more holistic and potentially more economical network-based station development. This strategy has significant potential to advance the market, increase the value of State funding for hydrogen fueling stations, and ultimately reduce the price of hydrogen sold to the consumer.

The current Investment Plan does not address this concept, although similar potential for future funding through CALeVIP is mentioned at least once. CARB recommends that the Investment Plan address the potential for committing future funds to hydrogen fueling station development, as it will send a clear signal to FCEV and hydrogen fuel stakeholders to have confidence in the State's commitment to the long-term funding envisioned in the *Draft Solicitation Concepts* and increase the impact of the Energy Commission's work to date.

CARB also agrees with the medium- and heavy-duty funding allocations in the Investment Plan. In particular, CARB supports expanding the focus of the advanced freight and fleet technology funding category to medium- and heavy-duty zero-emission technologies, and the proposed increase in funding for the category from $17.5 million to $30 million. While the category includes the potential for both infrastructure and vehicle investments, CARB recommends prioritizing this funding on infrastructure. CARB is already making significant investments in zero-emission vehicles and equipment both in the demonstration and early commercial stages through our incentive programs, but relies on the Energy Commission to lead on the corresponding infrastructure investments needed to help transform the fleet. These infrastructure investments are critical to ensure the success of recently adopted and

forthcoming regulations that require medium- and heavy-duty vehicle fleets as California transitions to a zero emission future.

With respect to the $20 million allocation for light-duty hydrogen fueling infrastructure, CARB is generally supportive of the concept of including medium-duty co-location at retail hydrogen fueling stations when it is possible and as determined on a case-by-case basis. Station economics can be more favorable with increased throughput, and the potential benefits of light- and medium-duty fleets acting as an "anchor tenant" have long been discussed in public-private cooperative efforts. However, it is not the case that these benefits can be universally realized at all station locations. In addition, management of the on-site operations and traffic has to be carefully considered in order to ensure that the fueling experience for light-duty passenger vehicles is not impacted and does not discourage adoption of FCEVs.

Also, neither medium- nor heavy-duty hydrogen-powered vehicles are yet widely commercially available; most vehicles on the road are proof-of-concept or demonstration units. Many of the fueling standards and technology are still in development and likely not compatible with light-duty fueling equipment, which means that their inclusion could also represent an added cost to station developers and operators. Many of these considerations are magnified when considering co-location of heavy-duty and light-duty vehicles, with one potential notable exception being the development of travel plaza-style fueling along long-distance routes such as I-5 and CA-99 in the Central Valley. For these reasons, CARB recommends that implementation of co-location focus on medium-duty applications over heavy-duty applications and that inclusion of these considerations in funding opportunities be addressed by optional incentives, rather than minimum requirements.

Collaborative efforts between CARB, the Energy Commission, and other State and local agencies have been key ingredients in the State's unique ZEV success story. CARB appreciates this opportunity to continue building on the collaborative successes and looks forward to further working together in the future.

Sincerely,

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Deputy Executive Officer