

**DOCKETED**

<b>Docket Number:</b>	19-TRAN-02
<b>Project Title:</b>	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
<b>TN #:</b>	233570
<b>Document Title:</b>	Air Liquide Comments - 19-TRAN-02 HD Drayage Design Concepts - Air Liquide Comments
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Air Liquide
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	6/22/2020 5:22:50 AM
<b>Docketed Date:</b>	6/22/2020

*Comment Received From: Air Liquide  
Submitted On: 6/22/2020  
Docket Number: 19-TRAN-02*

**19-TRAN-02 HD Drayage Design Concepts - Air Liquide Comments**

*Additional submitted attachment is included below.*

June 18, 2020

California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

**RE: Air Liquide Comments: 19-TRAN-02 CARB/CEC Pre-Solicitation Workshop for Zero-Emission Drayage Truck and Infrastructure Pilot Project**

Dear California Energy Commission Representatives:

Air Liquide would like to take the opportunity to comment on the design concepts outlined during the 19-TRAN-02: *CARB/CEC Pre-Solicitation Workshop for Zero-Emission Drayage Truck and Infrastructure Pilot Project*. 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 has become the limiting factor in enabling a broader rollout of this technology and in the MD/HD 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.

#### **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 MD/HD vehicle markets. While BEVs can provide solutions for short route, low utilization, and low capacity application, FCEVs are needed to meet the needs of the high mileage, high utilization, and large capacity users. We believe it will be important to allow for flexibility and for optimizing proposals such that each technology can be evaluated on its unique strengths while, perhaps not directly competing for funding. Both technologies will be needed to enable broad adoption in these markets and this should be reflected in state investments under this program.

#### **Number of Awards**

We commend the concept of combining funds from CEC and ARB in order to equally address vehicles and infrastructure on these projects. The \$40M funding with 50% cost share will drive large projects that will be able to demonstrate market viability of these technologies. We are concerned that the target project size of 50 vehicles by 2023 is overly ambitious and will either prevent good applications or force applications into risk positions that could jeopardize successful outcomes. Vehicle OEMs, in particular, have expressed concerns about meeting these numbers. We suggest that the project(s) target and present a growth plan to 50 vehicles but that the 2023 target be on the order of 20-25 vehicles. Reducing the scope of the project should also allow for multiple project awards, further increasing the likelihood of successful demonstrations.

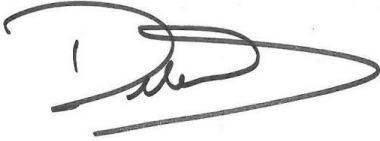
#### **Eligible Expenses and Technical Requirements**

Our experience shows that the best projects result from proposals that allow for flexibility in meeting the state's goals. Along these lines, we would suggest that eligible expenses on the project be broad and that the technical requirements not be overly prescriptive. By giving flexibility to meet economic, environmental, and energy targets, each proposing team will be able to optimize their proposals according to their unique business needs. We recommend that operation and maintenance costs as well as fuel costs be included in the eligible project costs, allowing fleet owners to adopt the new

technologies while managing their business without the undue risk of new technology adoption. Similarly, the infrastructure technical requirements should not be overly prescriptive as each proposal may have different refueling needs and operational characteristics.

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,

A handwritten signature in black ink, appearing to read 'David P. Edwards', with a large, sweeping flourish extending to the right.

**David P. Edwards, PhD**  
Director, Hydrogen Energy  
Air Liquide  
[david.edwards@airliquide.com](mailto:david.edwards@airliquide.com)  
off: 302 286 5491  
cel: 612 747 7636