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October 17, 2022

Tony Brasil, Branch Chief, Transportation and Clean
Technology Branch
California Air Resources Board 1001 I Street
Sacramento, CA 95814

Comments submitted electronically

RE: Comments Related to the Draft Advanced Clean Fleets (ACF) Regulation

Dear Mr. Brasil,

Air Products is pleased to provide comments regarding the draft ACF regulation. As the world's largest hydrogen producer with substantial operations in California, we are supportive of the goals of the regulation and support California's decarbonization goals. We strongly believe that hydrogen will play a substantial role in progressing these goals.

On July 25, 2022, Air Products announced¹ that it will spend or commit at least \$4 billion in additional new capital for the transition to clean energy over the next five years. In the two years proceeding this announcement, Air Products had announced approximately \$11 billion in clean energy investments. Within California, the company safely operates nine hydrogen production facilities, 27 miles of hydrogen pipeline and currently supplies a network of light-duty and heavy-duty transit bus hydrogen fueling stations, facilitating the transition to carbon-free transportation and zero emission vehicles, in line with California's goals. In fact, Air Products has supplied a majority of the hydrogen used in the California mobility market to date.

Air Products and Cummins have jointly announced the signing of a Memorandum of Understanding (MOU) to work together to accelerate the integration of hydrogen fuel cell trucks in the Americas, Europe and Asia. Cummins will provide hydrogen fuel cell electric powertrains integrated into selected original equipment manufacturer (OEM) partners' heavy-duty trucks for Air Products, as Air Products begins the process of converting its global fleet of distribution vehicles to hydrogen fuel cell vehicles.

Following a successful demonstration and pilot phase, Air Products plans to convert its global fleet of approximately 2,000 trucks to hydrogen fuel cell zero-emission vehicles. Cummins and Air Products expect the demonstration phase to begin in the near future. Additionally, Cummins and Air Products will work together to increase the accessibility of renewable hydrogen, including

¹ [Air Products Announces Additional "Third by '30" CO2 Emissions Reduction Goal, Commitment to Net Zero by 2050, and Increase in New Capital for Energy Transition to \\$15 Billion](#)

hydrogen infrastructure opportunities that promote the adoption of hydrogen for mobility. The state of California is the target geography for our initial roll-out of these vehicles.

Air Products is fully supportive of transitioning medium and heavy-duty fleets in California to zero emission vehicles consistent with California's carbon reduction and air quality improvement goals. We also maintain a fleet of 88 vehicles serving the California market which will be covered by the proposed High Priority and Federal Fleets Requirements regulation. While we are supportive of the goals of the regulation, we do have some specific comments that we believe will improve the regulation and ensure workable outcomes for fleet operators.

A low mileage exemption is needed to accommodate out of state vehicles with infrequent travel in California

While we have vehicle fleets domiciled in California, we do have the need for occasional shipments and use of trucks from out of state. One example includes infrequent deliveries of helium to California from out of state terminals. These terminals are located in several states across the middle of the U.S. thus necessitating refueling stops enroute to California. In the near to mid-term (through 2030), it is not practical to make investments to ensure that such vehicles have either the necessary charging or hydrogen refueling infrastructure located at out of state locations to facilitate the delivery of products to California for infrequent deliveries. In the longer-term, as we continue to convert our fleet to zero emission vehicles, we are hopeful that other states follow California's lead and either the infrastructure will grow organically, and/or we can make the necessary investments in our own stations outside of California. As such, we recommend inclusion of the following exemption to both Sections 2015.1 (c) and 2015.2 (e) of the draft regulation for vehicles that travel infrequently in the state of California.

Low California use Vehicles – Fleet owners of low-use vehicles that do not exceed 5,000 miles per calendar year of mileage driven in California may exclude the vehicle from section (2015.1(b) or 2015.2(b), respectively) and shall; (A) Keep records of electronic tracking, (B) Keep records of dates and the odometer readings when the vehicle leaves and returns to California to demonstrate that no more than 5,000 miles per year was driven in California.

Please note that we are not suggesting that such vehicles domiciled out of state are not included in the fleet for the purposes of determining applicability against the fleet eligibility threshold in the regulation or other routine reporting requirements associated with these vehicles.

Eligibility for hydrogen internal combustion engine vehicles

Air Products suggests that hydrogen fueled internal combustion engine (ICE) vehicles be included as a compliant vehicle in the regulation. Several manufacturers are developing hydrogen ICE engines that will produce zero carbon emissions and nitrogen oxides (NOx) emissions 75% lower than today's heavy-duty diesel trucks. In a situation where a fuel cell vehicle is not yet available in a particular service, a hydrogen ICE replacement is still better than retaining a diesel vehicle in the fleet. The flexibility to use hydrogen ICE trucks will mitigate fleets that are negatively

impacted by increased tractor weights since hydrogen ICE trucks are expected to be at least 2,000 pounds lighter than their fuel cell or battery-electric equivalents. This will encourage the hydrogen market for transportation to grow, allow flexibility for compliance, and likely result in earlier adoption and deployment of alternative fuel vehicles.

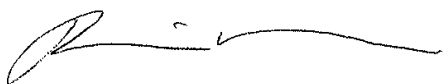
Provide separate evaluations for fuel cell vehicles (FCVs) and battery-electric vehicles (BEVs) availability and enable exemption language once a fleet has committed to the infrastructure investment to support a preferred technology

We understand that CARB's vehicle availability assessment and related exemption applicability is intended to be a fairly course screen that is based simply on whether a ZEV of any type is available in that class or service. If such a vehicle is determined to be available, then fleets must assess on a vehicle-by-vehicle basis the suitability of the available vehicles for their particular service and avail themselves of other exemptions if needed. Within these other exemptions, and in the initial availability screen, there is no recognition of the important relationship between fleet vehicle and infrastructure investment. Fleet owners will likely determine early in the program whether they want to invest in electric charging infrastructure, including the necessary electrical system upgrades needed for larger fleets, or hydrogen refueling infrastructure. Once these investments are made in refueling infrastructure, there will be a strong preference to ensure these infrastructure investments are utilized and monetized by purchasing the correlated ZEV that can be refueled using this infrastructure. Neither fleet will want to be forced to invest in both electric and hydrogen refueling infrastructure simply because they are forced to purchase an available vehicle.

Air Products believes that the availability analysis should be done separately for BEVs and FCVs and enable fleets that have formally made a capital investment in infrastructure to use the screening based on their selected technology. This will likely encourage fleet operators to install the needed infrastructure sooner and improve their regulatory certainty with respect to vehicle purchasing and fleet planning. If such a concept is acceptable to CARB, we are willing to work through the details and safeguards for such an approach to ensure that CARB's desire to advance fleet turnover to zero-emission vehicles is not impeded.

Air Products appreciates the opportunity to provide this feedback and we would be happy to meet with CARB to discuss further or work through draft language. Please feel free to contact me by phone (916-860-9378) or email hellermt@airproducts.com.

Respectfully,

A handwritten signature in black ink, appearing to read 'Miles Heller', with a long horizontal flourish extending to the right.

Miles Heller
Director, Greenhouse Gas Government Policy